

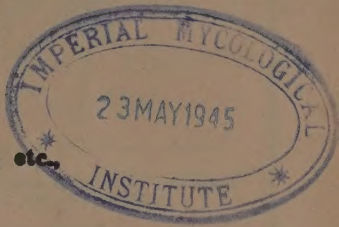
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Vol. 46.

No. 2

FEBRUARY 5th, 1945

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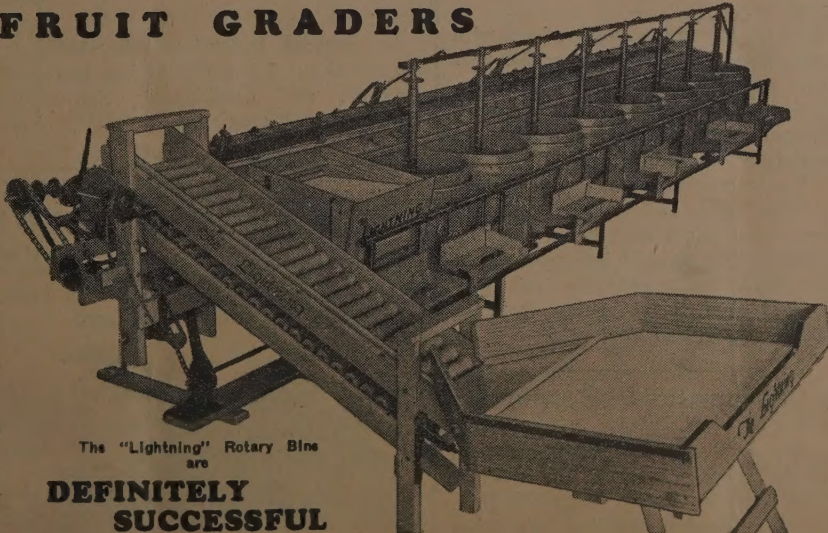
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Extract from "BETTER FRUIT" by Dr. R. L. Webster, Entomologist, State College of Washington, Pullman: **CODLING MOTH COVER SPRAYS**—"Ever since the imposition of an arsenic tolerance in 1936, and even before that time, investigators have been testing other materials which may be used in place of lead arsenate. Following all these intensive and extensive investigations lead arsenate appears to have certain inherent qualities which place this material foremost as an insecticide for codling moth control."

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Citrus Notes

NITROGEN AND THE GRAPE-FRUIT.

(Condensed from the "California Citrograph.")

This article is based on data obtained by various workers in the Horticulture Department of the University of Arizona.

The seasonal nitrogen content of the tree influences or determines the yield of fruit and those physical and chemical characteristics of the fruit that affect its market value.

In the first place nitrogen determines the amount of phosphorous, calcium and potassium the tree will take up from the soil.

The same appears to be true for the so-called minor elements, like zinc, magnesium, copper, etc.

The analysis of the leaves provides the most effective way of determining the amount of nitrogen in the plant as a whole, and in the mature Grape-fruit leaf the percentage of nitrogen has been found to vary from 1.2 per cent. to 2.2 per cent.

Having the greatest possible amount of nitrogen does not necessarily render a tree superior to all others. The following is a summary of the effects of variation in the nitrogen content of Grape-fruit trees:—

(1) A high level of nitrogen maintained throughout the year.

Trees tend to dark green all year round. Good yields with good and bad years tending to alternate. Late maturing crop.

High acid content in fruit. Low vitamin C content.

(2) A low level of nitrogen maintained throughout the year.

This produces the typically neglected orchard. Little growth made. Leaves yellow throughout year. Little or no fruit.

(3) A low level of nitrogen in winter and spring and a high level in summer and autumn.

Trees tend to be moderately green in winter but dark green in summer.

Yields tend to alternate from fairly good to fairly poor. Poor fruit quality.

Delayed maturity. High acid content.

(4) A high level of nitrogen in winter and spring, declining to low level in the summer and autumn.

This is condition which produces best fruiting.

Trees green in winter and spring become yellow by autumn.

High yields, which vary only slightly year by year.

Fruit has thinner, finer textured rinds.

Colours early and is held on tree well into spring.

Has high vitamin C content.

GRAPEFRUIT STORAGE EXPERIMENTS.

Mouldicides Tested at Different Maturities.

Experiments are being conducted and it is hoped from them to obtain sufficiently convincing results from long term Grapefruit storage to induce growers to hold early and mid-season fruit off a glutted or stagnant mid-winter or early spring market, and to cool store it pending a stimulation of the demand in warmer weather.

So far storage tests have been with fully mature fruit. During the past two years wastage has been decreased. There was no impairment of flavour of the fruit and cool store scald was virtually absent.

Two treatments used last year were waxing alone and waxing after immersion in 5 per cent. borax solution. Waxed fruit showed less waste than untreated fruit and the fruit previously immersed in borax solution substantially less again.

RHIZOPHAGUS IN CITRUS.

Mr. J. C. Neill, Chief Mycologist, Plant Diseases Division, Dept. Scientific and Industrial Research, N.Z., reports that investigations are being carried out to determine whether or not Rhizophagus is confined to citrus and in what manner it affects the well-being of the trees.

In N.Z., Rhizophagus has been found in all plant species examined. He said that citrus species have proved susceptible to strains of

Rhizophagus present in Auckland soils. Experimental evidence indicates that it is probably neither harmful nor beneficial to citrus.

CITRUS CROP PROSPECTS IN SOUTH AUSTRALIA.

Lighter Than Last Season.

In a recent report, the Chief Horticulturist, Mr. A. G. Strickland, stated that citrus trees were badly damaged in some areas by winter frosts, and in the Inman Valley, where most severe injury occurred, there will be practically no crop for 1945.

Elsewhere in the State, winter frost damage was patchy.

As a result of the heavy 1944 crop, combined with frost injury in some areas, a light citrus crop is in prospect for 1945. Washington Navel Oranges are showing poorest prospects, and indications are that the crop will not exceed 75 per cent. of normal. Valencia, Seedling Oranges and other citrus fruits may carry a crop of approximately normal dimensions.

On present indications, the 1945 crop of citrus fruits will be less than average, and considerably lighter than the 1944 crop.

LAND RECLAMATION.

The Leader of the Country Party (Mr. Fadden) recently brought under the notice of the Federal Minister for Commerce and Agriculture (Mr. Scully) the urgent need for tackling the soil erosion problem. He urged the Government to obtain the expert assistance of engineers and scientists who know the problem of soil erosion in America.

That the Americans have been eminently successful in the reclaiming of land may be gauged from the following facts relating to the "Dust Bowl" of California; 8,000,000 acres of injured land have been reclaimed since 1935. Previous to 1935, in one day alone, 3,000,000,000 tons of soil were blown 2,000 miles from once productive crop land.

Methods of prevention carried out by the U.S.A. Dept. of Agriculture consisted of an initial planting, over vast areas, of cover crops to tie the soil down. Shelter belts, each a mile long and having a right angled turn, were planted, and low-growing shrubs were interplanted in these belts. One acre of the shelter belts, including a strong fence to protect them from cattle, costs the Government only £9 and effectively protects twenty acres of land. Over a fifty year period it costs the Government threepence per year and the farmer twopence per year, allowing for replacements.

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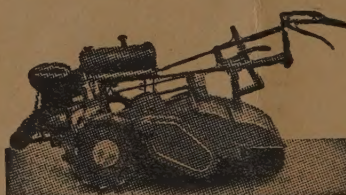
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February 5th, 1945

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NEWS OF THE MONTH

As we go to press news continues to come to hand of the defeat of the German armies and the steady advance of the forces of our Russian ally. Pressure is maintained on other fronts by British and American armies.

When will the final crack come? For come it must, and the European war is within measurable distance of ceasing.

Then full weight will be brought to bear to defeat the Japanese fascist imperialist aggressors.

The efforts of all citizens will be redoubled to secure victory. A new war loan has to be floated; Red Cross comforts funds and other services must be fully maintained.

.. ..

This brings nearer the problems of peace.

The presence among us of delegates from British farming interests is most opportune. The delegation has been well received in New Zealand and Australia. A broad national policy has been outlined for agricultural and horticultural industries, involving international co-operation.

Those sections of the Australian fruit industry which have organised themselves are to be congratulated on their successful efforts. They are in a position to negotiate now.

The hope is expressed that other sections of this important primary industry will sink any differences which at present exist, adopt a broad national outlook, and thus be in a position to take their due place in national affairs. The only hope is in unity.

SOIL EROSION.

Dust storms in many parts of Australia have awakened the public to the national menace of soil erosion.

Resolutions expressing alarm have been sent to Federal and State members of Parliament.

Recently Mr. A. E. Smith, M.H.R. (Wakefield, S.Aust.), drafted a National Soil Conservation Bill, and sent a copy to the Federal Treasurer (Mr. Chifley). The full contents of this Bill, proposing wide powers for the Federal Parliament, were published in the "Murray Pioneer."

It is to be hoped that action will be taken on the lines indicated.

The Deputy Prime Minister (Mr. Forde) has suggested that a conference of Federal and State officers be held to discuss plans to combat soil erosion.

CO-OPERATIVE MACHINERY GROUPS.

Since the Group Mechanization Plan was initiated by the Victorian Government in June, 1944, 41 groups have been established for priority food production in vegetable growing and dairying areas.

The Dept. of Agriculture, acting in conjunction with the Commonwealth Food Control authorities, arrange to supply suitable machinery to private contractors, corporate bodies and co-operative companies or groups of farmers who undertake to purchase and operate such machinery in the interests of a specified number of primary producers who, because of the smallness of their holdings, are unable to fully employ mechanized equipment on their properties.

Terms of purchase are attractive, repayments being spread over four or five years.

PERSONAL

Mr. C. H. Katekar, M.B.E.

A highly deserved honour has been that of creating Mr. Charles Henry Katekar, of Renmark, Sth. Aust., an M.B.E.

Mr. Katekar is an authority on citrus culture. From his "Fairview" property, Oranges have won many championships. He was one of the founders and also chairman of the S. Aust. Murray Citrus Growers' Association: he is chairman of the Renmark Irrigation Trust. Mr. Katekar has served the community with distinction as chairman or member of boards of directors of the Renmark Growers' Distillery Ltd., Renmark Fruitgrowers' Co-operated Ltd., Renmark Show Society, Settlers' Club, Hospital, and many public bodies. He visited California, the various irrigation centres of Australia: he achieved considerable success in the field of sport.

Mr. Katekar has freely given of his time and knowledge to serve his fellow producers, and is a highly esteemed citizen.

Mr. Keighley Ward, Research Officer, Queensland Dept. of Agriculture, has been conducting experiments of great value to producers.

At a recent meeting of the Deciduous Sectional Committee of the C.O.D., Brisbane, a resolution was carried authorising a letter to be sent to the Department conveying appreciation for Mr. Ward's valued services.

Mr. K. Ward, who is the son of Mr. J. M. Ward, Supt. of Horticulture, Victoria, similarly won appreciation for his entomological researches when attached to the Vic. Dept. of Agriculture. For his investigations into the life history and control of the Green Peach Aphis he was awarded a degree of Master of Agric. Science.

Growers in the Stanthorpe district, Queensland, desired to honor the services of Mr. D. Pfrunder, who has been a consistent worker for improved conditions for growers for many years. However, as Mr. Pfrunder declined a testimonial, it was decided that an enlarged framed photograph of him be hung in the C.O.D. rooms, Stanthorpe.

FRUITGROWER BITTEN BY DEATH ADDER.

Chops Off Finger to Save Life.

After being bitten by a death adder, Donald P. Savage, aged 18, of Brookfield, Queensland, chopped off a finger at the second joint. This prompt action probably saved his life.

Donald is the only son of Major P. J. Savage, Chairman of the C.O.D., Brisbane.

Donald was working among Passion-fruit vines when he felt a stinging pain in his little finger. Through his nature studies he recognised the deadly reptile. He killed the adder then coolly chopped off the finger with a grubbing implement. Donald is an assistant scoutmaster.

OBITUARY

Mr. E. Linnell (Huonville).

Sympathy is extended to the family and relatives of Mr. Edward Isaac

Linnell, of Huonville, Tasmania, who died during January. Mr. Linnell was prominent in the fruit industry, he having been one of the pioneers in Apple drying. He built an evaporating factory on his property about 47 years ago, and has kept up to date in methods of handling and drying. In company with Mr. V. J. Skinner he visited U.S.A. in 1903 to study the kiln evaporator, which they introduced to Tasmania. He leaves a family of four sons and four daughters.

INCREASED JAM CONSUMPTION.

Recent investigations show that Australians are eating more jam than before the war.

Probably because of butter rationing and other wartime shortages of foods, the production estimated for 1945 is 141,800,000 lb. of jams and marmalades, of which between 60 and 70 million pounds will be set aside for civilian consumption. This is equal to 12 lb. a head of population.

THE OSLO MEAL.

As the Oslo meal is now being widely adopted throughout Australia, it is of interest to recall the genesis of the idea and to state the results of recent experience.

In launching the programme for the making of better citizens among children in the crowded industrial suburbs of Melbourne, a group of helpers, headed by Dr. and Mrs. Ramsay Mailer, commenced a chain of Opportunity Clubs where girls and boys could have cultural and other facilities for the development of body, mind and spirit.

Noting the success of a simple, balanced and inexpensive meal, adopted under somewhat similar circumstances at Oslo, Norway, the principles were adopted here with surprisingly good results. Many children were found to be suffering from malnutrition, and although the circumstances were such that the Opportunity Clubs could only provide one meal per day—lunch for school children—the results were that the children receiving the lunch put on weight, bright cheeks took the place of sallow skins, and their capacity for learning and co-operative action was wonderfully increased. Briefly, the Oslo lunch, as now supplied, is as follows—Three slices of wholemeal bread (this must be wholemeal, and not a coloured imitation), a spread of butter and cheese or salad vegetables, a glass of milk, followed by an Apple.

A variation, including the sprinkling of wheat hearts (to supplement the Vitamin B1 content) had good results. Other fruits are added as opportunity offers—Oranges, Pineapples, Bananas, etc., also Lettuce, Celery or raw Carrot.

The eating of an Apple at the close of the meal adds vitamins and mineral salts, aids digestion in the chewing process, and assists to cleanse the mouth and to clean the teeth.

Opportunity Clubs are developing towards Community Centres in both residential and industrial suburbs. Many aspects of our community life are being gathered around these centres, including kindergartens, boy scout and girl guide troops, sporting clubs, trade classes, libraries and facilities for the development of musical and dramatic talent.

The Secretary of the Movement is Mr. R. A. Gardner, 60 Market-street, Melbourne, who would be glad to furnish any additional information.

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Seasonable Orchard Work

GREEN MANURE CROPS

These Add Nitrogen and Humus.

By G. W. Gayford, B.Agr.Sc., Special Horticultural Instructor, Vic. Dept. of Agric.

IN THESE DAYS of fertiliser shortage, green manuring is of great value in the orchard, citrus grove and vineyard. Leguminous plants are able, with the aid of roots nodule bacteria, to synthesize plant food from atmospheric nitrogen, and for this reason are most useful for green manuring. Regularly growing and ploughing under green crops also results in a considerable addition to the soil organic matter. Soil organic matter is valuable in that it increases the power of the soil to resist wind and water erosion, and provides easier penetration of irrigation water. For successful establishment of a green manure crop, the following points should be borne in mind.

Sow the crop as early as possible. By getting the crop sown as early as possible, which means no later than the end of March in any district, sufficient warmth in the soil and weather conditions usually allow good growth to occur before cold weather sets in. This is particularly important in Peach orchards, where tar distillate sprays damage green crops. If the crop is already well grown at the time of spraying, damage is less and the damaged crop will still provide a satisfactory amount of green material in comparison with a crop only a few inches high. Growers in northern irrigation districts are able to water the crop after planting, but in non-irrigated areas, growers are dependent on suitable rains to establish crops. Advantage should be taken of the first suitable rain in late February or March. The practice of sowing each alternate land enables this work to be done before the completion of harvest.

Kind of Seed to Sow.

There is a shortage of some of the popular kinds of green manure crop

seeds. Tick Beans, one of the most useful crops, are in short supply. Dun Peas and Blue Lupins are available. Cereal crops, including Oats and Barley, which are sometimes grown in mixtures with legumes, are almost unobtainable. Ryecorn, well suited to growing on poorer classes of soils, is available. Peas and Beans should be grown at the rate of 1½-2 bushels per acre, and cereals at 1 bushel per acre.

Fertilizers.

Under irrigation, a ration of superphosphate at the rate of 1 cwt. per acre for the area under orchard or vines will be available. This should be a sufficient dressing in most cases. For poorer soils in Southern Victoria, an addition of nitrate of soda would assist in the establishment of the crop. Liming at the rate of 2 tons per acre ground limestone, 1½ tons slaked lime, or 1 ton burnt lime has also proved of benefit in poorer soils. The effect of liming should last three to four years.

BUDDING STONE FRUIT.

During February the reworking of stone fruit by budding may be continued. This method of both changing the variety and propagating trees is the most suitable for stone fruit.

Rootstocks should be budded within a few inches of ground level. In

changing the variety of a tree the buds should be inserted in healthy laterals, which grew last year, at a distance of 6 to 8 inches from their base.

The budding of at least two varieties of Plums on the one tree will facilitate cross-pollination. Suitable combinations would include Early Orleans, Angelina and King Billy, or Grand Duke, President and Jefferson.

It is important to select healthy, well-grown budwood free from any leaf variegation. It is necessary that the budwood should contain leaf buds. Multiple buds, i.e., a cluster of one or two blossom buds and a growth bud, occur in Peaches, Apricots or Japanese Plums. These would be suitable, but single blossom buds, such as occur in Peaches, should not be used. Blossom buds are plump and roundish compared with the flatter, pointed leaf buds.

PREVENT YOUR FRUIT FROM DROPPING.

Apple and Pear growers frequently suffer extensive losses through the dropping of fruit when it has almost reached maturity. This dropping is increased by heat waves or high winds and the varieties most affected are the Williams' Pear and the Jonathan Apple.

CONTOUR PLANTING IN ORCHARDS.

Mr. R. J. Benton, Citrus Expert of the N.S.W. Dept. of Agriculture, has

recommended the widespread introduction of contour ploughing and planting in hillside orchards.

He points out that it is not a new practice, but has been widely used in America and older European countries for many years.

Where it has been used its chief function has been to enable watering by channel irrigation, but Mr. Benton sees no reason why it should not be applied to all hillside orchards. He declares that soil erosion is diminished to a minimum when surface runoff is reduced and that reduction of the slope enables greater percolation to the soil and sub-soil, hence utilizing our none too plentiful water supplies to their greatest extent.

Many have declared that this increase in the amount of percolation is likely to create damp spots in the soil and so encourage such diseases as black spot. Mr. Benton shows that the reverse is the case. Contour ploughing causes the water to be equably distributed and does not allow it to collect in undue quantities in natural depressions.

Continued use of contour ploughing ultimately causes the formation of terraces on hillsides, creating a far more desirable type of surface than a hillside slope.

REMOVING SPRAY RESIDUE.

The experience of many growers that washing Apples and Pears to remove spray residue is preferable to wiping.

One advantage of community packing houses is that this matter can be dealt with by a mechanical washing machine.

Where the fruit is handled on individual orchards, it has been found that the dipping of Apples in a bath of 3 per cent. hydrochloric acid for two minutes will remove the residue when rinsing. Care should be taken to keep the acid up to the required proportion.

Where stronger acid solutions are used, or longer immersions, particular care must be paid to thorough rinsing.

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Western Australia: Gibbs, Bright & Co., 179 St. George's Terrace, Perth.

Works: PRAHRAN GROVE, ELSTERNWICK, VICTORIA — LF 1468

Such losses may be reduced by the use of a chemical which, when sprayed on the tree at a dilution of approximately ten parts per million, will delay considerably the dropping of the fruit. The chemical is a substance which occurs naturally in plants in very small quantities, but is now manufactured synthetically. When sprayed on the trees, it is absorbed by the fruit and prevents the formation of corky tissue in the stalk of the fruit, the cause of the shedding.

The effect of one spraying lasts for about a fortnight. It is necessary, therefore, to spray the trees about 8 to 10 days before the estimated harvest period. If a wind storm or heat wave is forecast before that time, a spray should be applied immediately and many cases of fruit may be saved. The chemical can be mixed with the usual lead arsenate or white oil sprays for codling moth control. If it is not desired to apply other sprays, use half a gallon of white oil emulsion in 100 gallons of

spray. Thoroughness in spraying is essential, and it would be wise to use a slightly larger quantity of spray per tree to ensure this.

By using this spray and reducing the danger of the fruit dropping, some growers may be tempted to delay harvesting Jonathans to obtain more highly-coloured fruit. Picking should not be delayed beyond the normal harvest period, however, as this would result in disorders in cool store.

ORGANIC MANURES.

Of Great Value for Fruit and Vegetable Crops.

THE IMPORTANCE of organic manures was recently dealt with by Mr. J. Douglass, N.S.W. Dept. of Agriculture. Speaking of his visit to Europe, Mr. Douglass observed that the Egyptians, like the Chinese, rely largely on organic

manures to preserve the fertility of their soils.

In England it was observed, since the use of artificial inorganic fertilizers has become widespread and the application of organic manures consequently declined, that the quality of the soil and that of the crops has deteriorated.

Quoting Mr. F. A. Secrett, one of England's largest vegetable growers, Mr. Douglass said that chemical fertilizers had a place in the manurial system as a quick stimulant to a crop. However, the amount spent on chemical fertilizers was only 10 per cent. of the sum expended on horse manure. Other items included inorganic salts, lime and soot.

Thus the main source of the plant food is the organic manure.

Mr. Douglass recommends the following as being valuable aids to soil improvement: Cottonseed meal, dried blood, fish scrap, garbage residue, linseed meal, sewage sludge, castor

meal, peanut meal and shells, raw bone meal, artificial organic manure, compost, peat, seaweed, water hyacinth, wood ash and wood residue.

CODLING MOTH.

No Relaxation of Spraying Because of Light Crop.

Reports from all Apple districts in Victoria indicate that codling moth has caused considerable damage. Some growers claim that the usual sprays do not appear to be effective this year. Mr. G. W. Gayford, Horticultural Instructor of the Victorian Dept. of Agric., points out that it is always noticeable when the Apple crop is light that codling moth is conspicuous and apparently more difficult to control. Last season there was a particularly heavy crop of Apples, and unless spraying was efficient, the moths could breed in large numbers without seriously reducing the total yield. It would mean, however, that there would be a large population of over-wintering grubs. A big spring brood of moths would make control difficult early in the season. Spraying could not be expected to be completely efficient because vigorous leaf growth, which occurs with a light crop, prevents complete spray coverage of the fruit, and increases deterioration of the spray coating by "leaf rub."

Although there is an explanation for the increased damage, there is no excuse for relaxing control now. The most serious damage in Apples can occur from the late brood of moths. Because growers are harvesting fruit at this time of the year, there is a tendency by some to forego spraying, whereas it would be more economical to concentrate some of the available labour on spraying, should a period of moth activity occur. Growers not desiring to build up a deposit of lead arsenate at this time of the year may prefer to use white oil emulsion, strength—1 gallon in 80 of water.

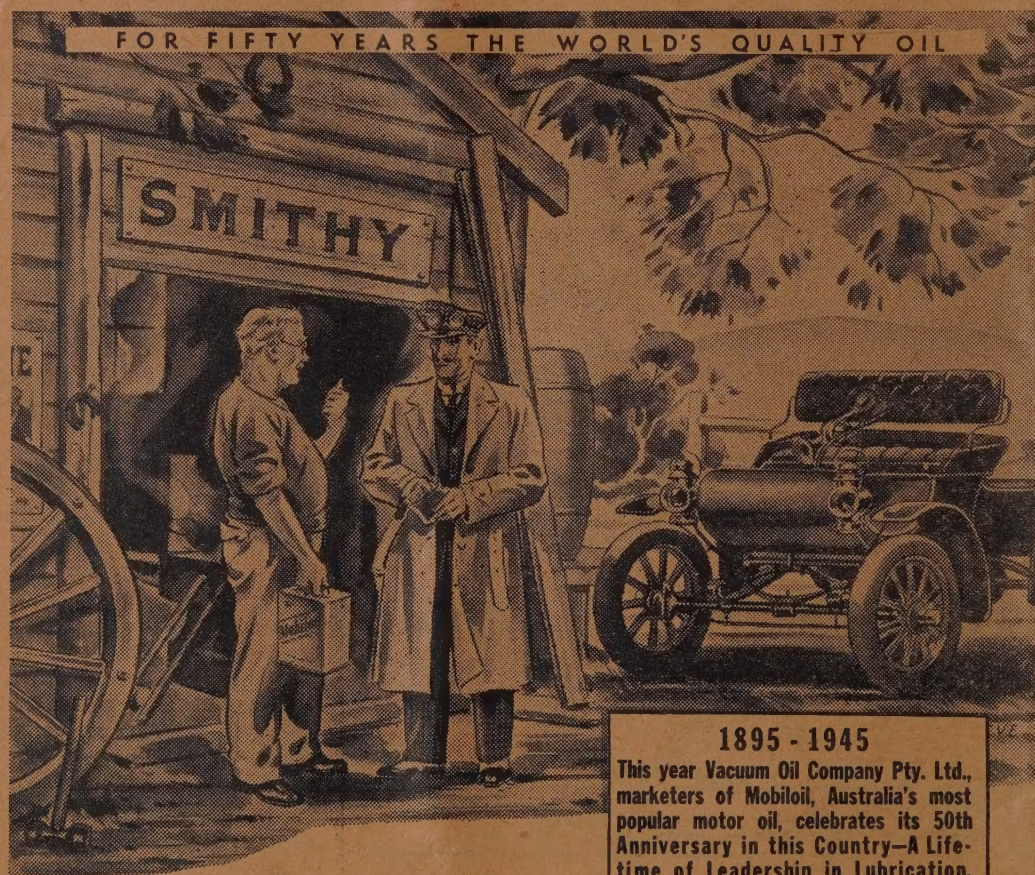
FEWER WASTEFUL WINDFALLS.

Observation led Dr. Frank E. Gardner, of the U.S. Bureau of Plant Industry to believe that the natural hormones in the Apple tree might be supplemented at the right period and delay abscission of the fruit.

Certain chemicals of synthetic origin, though not identified in plant tissue, are known to produce effects similar to those characteristic of hormones. A naphthaleneacetic acid and related compounds, when applied in water sprays were found to delay abscission of fruit stems on both Apples and Pears.

The acid is mixed with water in 0.001 per cent. solution: 1/7th of an ounce to 100 gallons, and is sprayed throughout the trees at the time the first windfalls appear.

Satisfactory results followed in Australia by spraying with prepared material to prevent the pre-harvest drop of Apples.



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Tasmanian News and Notes

SUBSTANTIAL APPLE CROP SHOWING — FRUIT CASE PROBLEMS
— INTERSTATE SHIPPING — DEVELOPMENT OF PORT HUON
ADVOCATED — ENGLISH FARMERS TOUR TASMANIA.

(By Our Correspondent.)

THE WEATHER CONDITIONS in the northern districts have continued favourable for cultivation and spraying with sufficient rain to promote growth and so the crops look well up to size for the time of year.

Taking the district as a whole, the fruit is free from spot and so far moth is not prevalent.

W.B.C. Pears will soon be ready for canning. Other varieties of Pears appear to be carrying average crops.

Apples are patchy. Worcesterers are well up to size and should be in demand when ready. There are some fine crops of Cox Orange and Jonathans and Democrats appear to be carrying a full crop in most places.

Case material is an ever-increasing problem and is likely to cause trouble before the season is finished.

In the Southern districts the Summer to date has been rather cool and windy, with plenty of rain, and in consequence, growth is being well maintained; there have been some warm days from the 18th to the end of January.

About Christmas we had red rain right down in the south, and it gave the foliage an unusual appearance for Tasmania.

Cultivation appears to be well in hand in most commercial orchards and spraying carefully attended to, but in spite of that black spot is rather prevalent on Sturmers and Cleos. in some localities, no doubt the showery Spring following a wet Autumn favoured fungus diseases. Moth and spider are not prevalent to date, but may become troublesome later if the weather favours them.

Apples are well up to size for the time of year and the crop should come up to the average total.

C.O.P. are good in most districts, Jonathans are patchy; S.P.M. as last season; Granny Smith are on the heavy in places; Cleos. are lighter than light side, but as many young trees and reworks are coming into bearing it is hard to forecast what the total

will be, last year it ran up to about 400,000, probably there will be a decrease of 100,000. Democrats appear much heavier than last year. Sturmers are a fair average crop and are well up to size in most places.

Pears are patchy: Packhams good, B. Bosc good, W. Coles very patchy, Josephines average fair.

It is expected that all factories will make a punctual start this season. If so there should be very little waste.

Berry fruits are turning out very well with a few exceptions, and the Women's Land Army are helping well in the picking. The moist cool weather experienced up to date has favoured the berry fruits.

Shipping Problems.

Concern is felt at the probable shortage of shipping space for the interstate trade; there should be an excellent demand on the mainland for all that can be shipped and the quality, if put straight on to the market, would be satisfactory.

There seems to be something wrong with the manner in which Tasmanian fruit is marketed, Sydney shopkeepers complain that they cannot get anything but job lines owing to the system of branding, and object to such a proportion of fruit ex cool store. The frequent changes in the system of branding have puzzled us growers for some time and caused a lot of extra work.

Representations are being made to the Government to put the deep water wharf at Port Huon in a state of repair in time for a resumption of trade after the war. There is a saving of approximately £11,000 on every million shipped from there in local freight or cartage alone, besides cutting out a lot of rough handling and congestion on the Hobart wharves.

The English Farmers' delegation toured Tasmania during the end of January. On the 23rd they were taken

through the Huon and Channel districts and then up to the North-east and North-west coast. The country is looking well and should create a favourable impression.

The State electric scheme at Butler's Gorge is being pushed forward, the additional power is badly needed for new industries and there are still many rural areas that have not got power and light laid on. Electric power on the farms is a real blessing.

Both political parties are getting busy in Tasmania and are selecting candidates already for the next election.

FUTURE OF PORT HUON.

The Tasmanian State Fruit Board has expressed unanimous advocacy of the need to maintain the Port Huon Wharf and to extend its usefulness by shipping all fruit grown in the Huon District from the wharf.

Mr. St. Hill stated he had discussed the matter with the Public Works Dept., whose opinion was that £50,000 would need to be spent on the wharf in the next ten years.

The Chairman of the Board (Mr. T. G. Thompson) said that in relation to interstate trade, the Cygnet wharf had been very useful to the fruit industry.

APPLE CROPS IN AUSTRALIA.

There are light crops of Apples in Sth. Australia, Victoria, N.S.W., and Queensland.

The Tasmanian crop is estimated at about 7,000,000 bushels, and supplies of fresh Apples will be sent to the mainland to the full extent of the shipping space available.

It may be necessary for Tasmanian Apples to be sent to S. Australia.

Western Australia has a medium Apple crop. After providing for the expanding consumption of Apples in W.A., and providing for the drying, canning and juicing of Apples, there should be sufficient available for making some of the deficiency in the Eastern States.

The programme for processing—dried and canned Apples, Apple juice and Apple sauce, Apple butter, etc.—it is expected will absorb most of the balance of the Tasmanian crop.

Success has attended the efforts of the W.A. Committee of the Australian Apple and Pear Marketing Board in supplying Apples in half case lots direct to consumers by means of mobile Apple trucks.

The supplying of Apples in cartons to munition and other factories in Melbourne and Sydney has developed into a substantial enterprise.

D.D.T. AND THE CALIFORNIA RED SCALE.

The Entomology Dept. of the University of California Citrus Experiment Station, Riverside, has been carrying out extensive research regarding the use of D.D.T. against the California Red Scale.

Results show that when D.D.T. was added to oil solutions used in spraying, a slight increase in the kill

of the adults occurred. What was important, however, was the effect on the young which were unable to settle and develop.

An abbreviated table shows the effect of oil alone and of oil with D.D.T. on adults and young born.

The residue from spraying prevented 100 per cent. of the young scale from developing even after 55 days during which time several inches of rain fell.

Material.	Per cent. kill of adult female.	Effect of D.D.T. residue on young.
0.75% oil alone.	26	1,050 settled per fruit and all developed.
0.75% oil + 6 gms. D.D.T. per 100 millilitres of oil.	56	Some settled. 1 developed per fruit.

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British Farmers' Delegation

Visit to New Zealand and Australia.

Need for Unity Among Fruitgrowers.

ON A MISSION of goodwill and with a message of international collaboration, a delegation of British farmers and fruit-growers visited New Zealand and some Australian States during January; they are continuing their journey among the remaining States before returning via Canada.

Speaking in New Zealand, the leader Mr. James Turner, said an Empire organisation was planned which should meet at least annually, and be equipped with statistical and all relevant information, and to function as a bureau for scientific advances and market intelligence. He recommended an Empire Producers' Conference in October next. They were firm in the belief that a well planned

and prosperous world agriculture, accompanied by the equitable distribution of the world's food resources, was the foundation of world prosperity and peace.

When in Tasmania the British Farmers' Delegation was entertained by Producers' Organisations. Orchard districts were inspected.

The Minister for Agriculture (Mr. Madden) praised Britain's war endurance, and paid a tribute to the wonderful work of British primary producers.

The Commonwealth Director of Agriculture, Mr. Bulcock, said that stabilisation of primary industry in the economic sphere was essential. Facts must be faced. Farmers would have to relinquish something of their individualism in a contribution to the common good.

Mr. James Turner said it was the hope of British farmers that wider collaboration would prevent recurrence of the devastation caused by unrestricted, unregulated importation of primary products into United Kingdom between two wars.

Mr. Giles Toker, who is Chairman of the Associated Fruitgrowers (Essex) and Chairman of the Fruit Packers' Council, when in Victoria, met many of the leaders of the fruit industry, inspected cool stores, packing houses, and obtained much statistical and other information.

In an interview with the "Fruit World," Mr. Toker said he had been pleased to observe the success of grower organisation in New Zealand, along co-operative lines through the N.Z. Fruitgrowers' Federation. In Australia, however, he had observed that there was a lack of unity among sections of producers, and he would stress the slogan, "Unity is strength."

Continuing, Mr. Toker said there was urgent need for growers to organise in order to be able to take their rightful place in the planning for the most effective distribution of their share of the world's fruit supplies. He believed whole-heartedly in producer-controlled organisation. If producers did not play their part in planning fruit distribution and pro-

duction, who else could do it so effectively? Further, if producers failed to control their industry through organisation, others would do it for them.

Growers should sink their differences and get together in a co-operative manner.

Mr. S. O. Ratcliff (Vice-President, National Farmers' Union) spoke appreciatively of the general attitude of helpfulness to the delegation which had been everywhere displayed. He referred to the Hot Springs Conference, and to the worthy ideals of international collaboration in regard to production and marketing. To assist in implementing these ideals, representatives of British agricultural industries had undertaken the present strenuous tour in order to lay the foundations for improved world conditions in agriculture. The need was urgent, and possible benefits incalculable.

NEW SALES RECORD FOR P.D.S.

With a total sales turnover of £8,964,389/9/8 for the year ended September 30, 1944, the Producers' Co-op. Distributing Society Ltd. created a new record.

To further strengthen the financial position of the group the directors have recommended that £40,000 be added to the general reserve. The net surplus on the year was £59,161/15/11, and this, with the balance brought forward, made a total of £62,559/10/7. A dividend rate of 4 per cent. was recommended.

Overseas transactions are still restricted, but dairy produce continues to be distributed to Britain through Empire Dairies.

Regret has been expressed at the death of Mr. G. W. Gordon, a director for many years. Mr. P. L. Christian, of Raleigh Co-op. Dairy Soc. Ltd., has been nominated to succeed Mr. Gordon.

"CELLOPHANE."

In our issue for July 5, 1944, the word "cellophane" was used inadvertently in such a manner as might create the impression that cellophane is the name of a material. The word "Cellophane" is, of course, the registered trade mark of British Cellophane Ltd., of Bridgwater, England, and denotes, exclusively and distinctively, the brand of cellulose sheets and films supplied by that company. "Cellophane" should not be confused with other makes of transparent cellulose sheets and films.



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Queensland News and Notes

North Queensland.

The North Queensland crop of Rough and Ripley Pineapples is now finished and the Smooth crop has practically drawn to a close. The demand was exceptionally strong. Main production came from Magnetic Island, close to Townsville, and from Ayr and Bowen.

Growers of choice Mangoes had a very good season.

Banana production in the North is going ahead rapidly, particularly at Cardwell, where some excellent fruit is being produced of the Cavendish, Mons Marie and Gros Michel varieties. Most of the fruit is very large. Cardwell is located approximately mid-way between Cairns and Townsville, and supplies both markets. Hitherto the industry has been handicapped in the North by a lack of modern ripening facilities. This is now being remedied by the C.O.D., which is constructing ripening rooms and cool rooms at both its Cairns and Townsville wholesale branches. It is anticipated that when these rooms are completed, consumption in the North will be very substantially increased as a scientifically ripened Banana is much more attractive, both to the eye and the palate than one ripened by the application of gas and heat.

On account of weather conditions, local production of vegetables is now almost at zero point, and the North is drawing the bulk of its supplies from South Queensland.

Central Queensland.

Pineapple growers have practically finished their Rough and Ripley crop and are now busy with Smooths.

Apart from Bananas, the only other line now being harvested is Cucumbers, which are meeting competition from big quantities from Stanthorpe, and glutted conditions prevail.

South Queensland.

The Stanthorpe fruit crop was seriously reduced by frost, and many growers immediately increased their plantings of Tomatoes and Beans. Weather conditions were unfavourable until the middle of January, when excellent relief rains fell.

A heavy crop of Tomatoes is being harvested and is being supplied mainly to Brisbane, Rockhampton, Townsville and Cairns, with indications of portion going through to Sydney.

Attractive prices were realised for the stone fruits, and for Cabbages which, on account of drought conditions, have been short of the demand.

Rail transport of fruit in Queensland, even to the most distant points in the North and North-West, is entirely by louvered wagon. Plans had been laid by the Deciduous Sectional Group Committee to forward several experimental iced trucks of stone fruit to the C.O.D. Branches in Cairns and Townsville. The wagons were promised by the Railway Department, but on account of the short crop it has now been decided to postpone the tests until next season when the C.O.D. cool rooms in Cairns and Townsville should be operating.

It has been finally decided by the Deciduous S.G.C. to erect a cold store at Applethorpe, in the Stanthorpe district, with a capacity of 20,000 cases.

The main crop of Smoothleaf Pineapples has just commenced in the early districts, and the crop should compare favourably with that of last year. It is not anticipated that the Department of Commerce and Agriculture will impose a compulsory diversion order on Pineapples for canning purposes. This will mean that growers will be free to take advantage of the fresh fruit markets throughout Australia, but a fair proportion of the crop, particularly during the peak, is sure to be sent to Brisbane canneries.

Production of Bananas has fallen off late years in Queensland, and is now barely sufficient to meet the demand. A Conference was called by Prices Branch in Sydney on January 16, to consider a proposal for the reduction of the ceiling price of Bananas. Representatives were present from the Banana Growers' Federation of N.S.W. and the Banana Sectional Group Committee of the C.O.D. Queensland's Delegates were instructed by their Group Committee to emphasise—

1. That to combat our objection that ceilings could not be enforced, very definite promises were made by officers of the Prices Branch that effective enforcement could be guaranteed.
2. That numerous instances have occurred where growers have not received the wholesale returns to which they are entitled by retail prices, clearly indicating lack of enforcement.
3. That adequate inspection and enforcement are essential in the interests of growers and consumers and those sections of the wholesale and retail trades endeavouring to observe the Regulations.
4. That if such policing and effective enforcement cannot be guaranteed, ceilings should be abandoned.

QUEENSLAND BEAN GROWERS IN CONFERENCE.

Dehydration — Manuring — Pest Control.

At a recent meeting of the Bean Sub-Committee of the C.O.D., Mr. R. J. McAnally presided. A resolution of sympathy was carried to Mr. Buchanan, who had lost a son on active service.

Arising out of the annual Bean Conference, matters dealt with included the canvassing agreement, tare stencils, market reports, claims for shortages, etc.

Dehydration. It was reported that the State Government was endeavouring to have a dehydrator erected in Queensland.

Fertiliser Trials. A resolution was carried requesting the Department of Agriculture to continue fertiliser trials next season on the same basis as previously, i.e., the Bean industry to meet half the cost of materials and transport used in such trials.

Nicotine for Pest Control. Mr. T. P. Reynolds said that he had been

told by an entomologist that the dusts being supplied at the present time were not satisfactory, as they contained only 3 per cent. nicotine instead of 5 per cent.

Mr. Holloway advised that at the present time the nicotine used in dusts was actually nicotine sulphate. To equal a 5 per cent. nicotine content it would be necessary to have 12½ per cent. nicotine sulphate. This would probably be effective, but would be far too moist. He advised that the last consignment of nicotine that was received in Australia had been broken down to nicotine sulphate in the south. If some of the nicotine could be reserved in the pure form for the manufacture of dusts, it would be possible to have the necessary percentage in the dusts.

It was decided to ask the Department to have pure nicotine made available to provide a higher nicotine content in Bean dusts.

QUEENSLAND FRUIT CROPS.

Mr. H. Barnes, Director of Fruit Culture, Queensland Dept. of Agric., has provided the following information regarding this year's fruit crops.

In the Stanthorpe district a severe late frost in October cut the crops of Apples, Pears, and stone fruits by 25 to 30 per cent. A number of orchards suffered 100 per cent. loss, and all were affected in varying degrees. Subsequently a hail storm did further damage in parts of the district, and almost continuous hot dry weather has prevailed since. It would probably be optimistic to estimate that

50 per cent. of a normal crop will be marketed.

Grape growers also suffered severe loss due to the frost. In some cases the young growth on the vines was so completely destroyed that remedial pruning to induce secondary growth from the basal buds was not even practical. The crop will be a very light one.

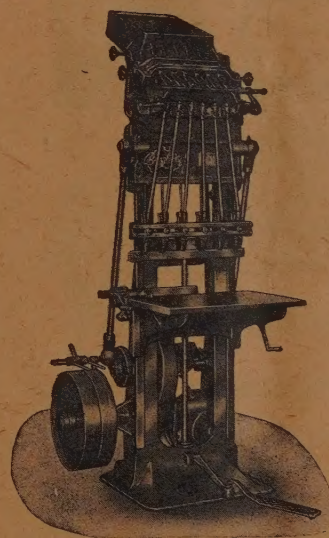
On the Coast, growers of tropical fruits have also experienced the effects of the dry spell, though storms early in December provided some relief. It is estimated that the citrus crops will be medium to normal in the irrigated areas, and light in the coastal districts.

The Banana crop will be about average, but Pineapple deliveries will be light.

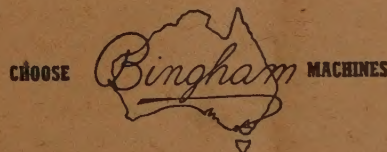
FRUIT MARKETING ACTS TO BE EXTENDED FOR FURTHER FIVE YEARS.

An Order-in-Council has been issued in Queensland under The Fruit Marketing Organisation Acts, giving notice of intention to extend the operation of the provisions of such Acts for five years from 1st January, 1945, and inviting a requisition of 500 fruit-growers, as prescribed, for a ballot on the question of such continuance, to be lodged with the Minister for Agriculture and Stock not later than 28th August, 1944.

Regulations have been issued which will provide for the conduct of the ballot, if such becomes necessary.



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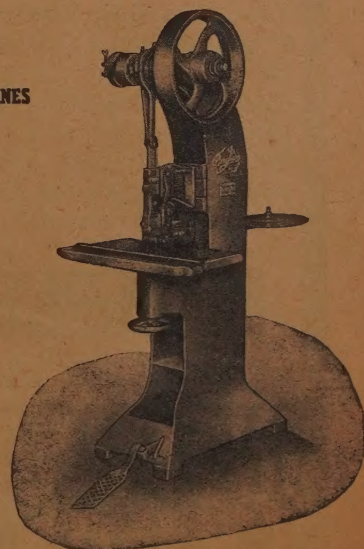
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Dried and Canned Fruit Notes

WORLD SUGAR SHORTAGE.

The leading authorities are not agreed as to how long the world sugar industry will take to recover: but it is clear that production on pre-war scale cannot be regained for some years after the cessation of all hostilities, states the "Empire Producer."

A table recently issued shows the destructive influence of war. World sugar production for the crop year 1938-39 was 29,478,000 tons, of which

no less than 11,841,000 tons were produced, in areas now under, or lately liberated from, the Axis countries. European production in 1938-39 was 8,590,000 tons and for five years areas capable of 7½ million tons production have been at the mercy of Germany. In Asia, with a normal capacity exceeding eight millions, the Japanese hold a half of the producing areas (the Japanese Empire, Java and the Philippines). The decline in Australian production from 891,000 tons in 1939 to 521,000 tons

in 1943 is a striking example of the effect of war on a Dominion fully engaged in the front line. Under the best conditions total rehabilitation of the industry must be a protracted business.

Russian Sugar Beet.

The rapid recovery of the Ukraine, since its liberation from German hands, provides a notable example of Russian resilience. In the four years before the war the Russian output of beet sugar rose rapidly and Germany was displaced as the chief producing country. Production in 1938 was in the neighbourhood of 2½ million tons. Willett and Gray report that all the collective farms and 90 machine tractor stations have been restored in Kiev Province. In 1941 about 150,000 hectares were sown to sugar beets in that province, and the tractor stations had 5,762 tractors and 1,368 sowers in operation. In 1942, under German occupation, only half that area was sown and a yield of 75 centners per hectare obtained, as contrasted with 145 centners in 1941. Sugar beets are also being grown in Kazakhstan and Kirgizia, tracts in central Asia.

GOULBURN VALLEY NOTES.

Shepparton (2/2/45).

The visit paid by the delegation of British Farmers and Fruitgrowers to the Goulburn Valley was highly esteemed. The matters discussed included closer collaboration to assist in an easier transfer to peace conditions. Decisions of the Hot Springs Food Conference and the implications of the Atlantic Charter were reviewed.

There have been local problems in the handling of Tomatoes for the canneries, but these are being steadily overcome. For a time the Shepparton factory was practically idle while Bendigo factories were operating on Shepparton-grown fruit. There was competition among the factories for supplies of Tomatoes, and Bendigo canneries had made contracts for supplies with Shepparton growers. Then came questions of pickings for the early market, road transport from Shepparton to Bendigo, the unusual incidence of the Tomato grub and the question of tolerance in this connection between factory and factory.

Good assistance has been rendered by townspeople and the authorities in providing housing accommodation for the seasonal workers.

The fruit crops are coming along nicely, and the seasonal work of spraying, irrigating and cultivation is keeping growers very busy.

DECIDUOUS FRUITS FOR CANNERIES.

Now Controlled in Queensland.

Recently the C.O.D., Brisbane, announced its intention to issue a Direction to control deciduous fruits for processing, and provided facilities for a poll of growers should a poll on the question be desired.

As no request for a poll was received, the Direction has been issued, under which the power to offer for sale in Queensland of any deciduous fruit to any canner, fruit preserver,

jam or pulp manufacturer, or juices extractor, is reserved exclusively to the C.O.D. or its nominees.

This Direction is in force for 12 months, from 1st January, 1945.

SOUTH AUSTRALIAN DRIED FRUITS BOARD.

At the December (1944) meeting of the S.A. Board further consideration was given to attempts at unlawful trading, and it was noted that a conviction had been secured in the case of a storekeeper in a country town for selling prunes unlawfully purchased from a grower whose identity could not be established. In other instances appropriate action had been taken.

The Deputy Chairman (Mr. F. M. McMillan) reported that, in company with the Secretary (Mr. W. N. Twiss) he had attended the conference at Murray Bridge on the 8th December, 1944, of representatives of all interests in Murray Valley development.

Thirty-five applications were approved for renewal of packing house registrations, as well as twelve applications for renewal of dealers' registrations.

The Chairman (Mr. G. A. W. Pope) on behalf of his colleagues extended congratulations to Mr. C. W. Till, a member of the Board, on his recent appointment as President of the S.A. High Schools' Association. Mr. Pope said it was good to know that the characteristic zeal and energy displayed by Mr. Till in connection with the establishment of a new high school at Glossop were acknowledged by responsible people in educational circles. Mr. Till acknowledged the compliment.

S.A. DRIED FRUITS BOARD.

At the January meeting of the S.Aust. Dried Fruits Board, the A.D.F.A. proposal for the classification of Lexias was discussed, and it was agreed to defer reaching a decision until the next meeting. In the meantime, the views of other interests will be obtained.

In regard to Drawback fruit, the Secretary (Mr. W. N. Twiss) reported on certain instances of growers having received excesses on the prescribed allowance for Drawback fruit, and submitted correspondence with the growers concerned. It was agreed that the Board issue a circular to all packing houses drawing attention to the Regulation, setting out the conditions under which Drawback is allowed, and asking for co-operation of packers in applying this Regulation.

The memorandum of the secretary on the matter of control of undipped dried Grapes for submission to the Consultative Committee was approved subject to certain amendments, and the secretary was directed to prepare a separate report on the classification of Prunes for consideration by the Board.

It was agreed to continue for the 1945 season the Door Classification Plan in the Renmark Area, and Mr. P. J. Leighton was appointed supervising grader.

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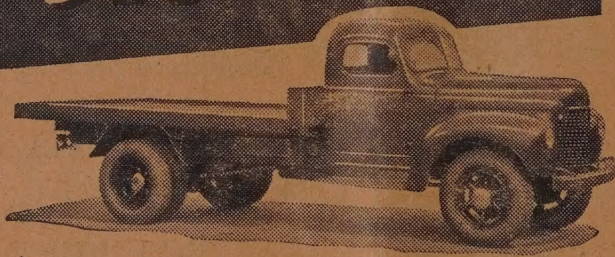
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Internal Pressure Test for Food Cans

It is essential for canned foodstuffs to retain a perfect vacuum. The entry of air or water will cause loss of part of the vacuum. The external leakage pressure test is commonly employed to test cans either before or after packing and processing. Lately the Council for Scientific and Industrial Research has received reports that this method is not wholly reliable. As a result they have carried out extensive research and put forward reasons for these complaints. It appears that cans containing moist foodstuffs need very thorough cleansing, and various methods are being tested out.

Internal pressure tests have proved more satisfactory, and actually determines the ability of the can to retain air under pressure. The method used is to immerse the cans in water and suitably introduce compressed air. If a continuous succession of bubbles appear it is known that there is air escaping from the interior of the tin.

Cans are tested and re-examined for leaks at various levels.

During the past three years the internal pressure test has been applied to many thousands of cans in the C.S.I.R. laboratory.

Cans which were known to have become spoiled or to have lost vacuum after processing were tested.

The total number of cans examined in these groups has been approximately 1,200, including 900 spoiled by micro-organisms, and 300 showing loss of vacuum. Of these 1,200 cans, only 25 failed to show leaks after preparation and testing according to the procedure outlined.

From experiment it appears that the three main causes of failure in commercial practice are: (1) Insufficient drying of the cans before testing; (2) Insufficient time allowed for the appearance of air bubbles; (3) Failure to detect bubbles because of faulty illumination.

New Refining Process to Improve Sugar — U.S.A. Discovery.

Reports state that Dr. Royal Lee, U.S.A., is developing a new process of sugar refining which will retain the high content of vitamins and minerals which is present in the juice of sugar cane.

The method used has been accomplished without cooking temperatures because much of the vitamin and mineral content is coagulated by heat. The method does not require the addition of chemicals and is somewhat along the lines used in dehydrating blood serum.

The new sugar is economically sound because twice as much as before can be obtained from a given amount of sugar cane. A very high percentage (8½ per cent.) of mineral element is contained in this sugar and vitamin content includes A, B complex, C and K.

Sweet Potatoes for Canning.

Mr. J. F. Kefford, in the Food Preservation Quarterly, said that canning trials were made of a number of Sweet Potato varieties grown in N.S.W.

The varieties under test were canned in several styles: Solid pack, whole Sweet Potatoes or pieces in sweet brine, and diced Sweet Potatoes in brine. The solid pack was the most attractive form of presentation and seems most likely to meet anticipated requirements.

Of the 18 varieties tested, Porto Rico was outstanding and an unnamed Porto Rico cross was also of high quality. Yellow Strasburg, White Yam, Nancy Hall, No. 1915 (Porto Rico cross), and "McDonald River Red," were indicated as fair canning varieties.

BARTLETT PEARS IN W.A.

Premium for Fancy Grades.

For some time past growers in the Hills district around Perth have proposed that Bartlett Pears (known also as Williams' Bon Chretien and Duchesse) for fresh fruit marketing, should be exempted from the Acquisition Plan.

This matter received consideration, and after a full debate was decided against by the Western Australian Fruitgrowers' Association.

An alternative proposal was then put forward—that growers of these Pears should be paid a premium above the normal rates for Pears. Mr. D. A. Mountjoy, M.H.R., took the matter up, and he states he has been advised by the Federal Minister for Commerce and Agriculture (Mr. Scully) that the premium had been agreed to of 1/3 per bushel on extra fancy grades, sizes 2½ to 2¾, delivered to and accepted by the Apple and Pear Marketing Board.

WESTERN AUSTRALIA.

The Western Australian Committee of the Australian Apple and Pear Marketing Board is constituted as follows:—Messrs. G. Parke (Chairman), J. McN. Martin (Deputy Chairman), H. R. Powell (Supt. of Horticulture), E. S. Hester, H. Q. Robinson, F. Etherington and O. E. Nilsson.

Mt. Barker.—Last season over 100 tons of high quality dried Apples was produced by the Mt. Barker Fruitgrowers' Co-op. Society Ltd. Owing to various difficulties the drying season was late in opening.

The Federal Government has asked for full production in 1945, and an early start is being made this season in order to provide the maximum quantity.

Vegetable Growing

NEW LAND NEEDED FOR POTATOES.

The Commonwealth Government requires 48,000 acres of Potatoes to be planted in New South Wales during the 1944-45 season in order to meet increased civilian and Service demands. As the average planting of Potatoes in New South Wales for the five-year period immediately preceding the war was approximately 17,000 acres, the magnitude of the task can be well realised. Tableland districts are being asked to provide the increased acreage, which means that an additional 14,000 acres, as compared with last year, will need to be planted.

In order to achieve the goal the co-operation of all, particularly of growers, will be needed. Many growers are already cropping to the full capacity of their farms, and they are desperately in need of extra land in order to maintain, and in some cases, increase production. It is known that large areas of good Potato ground exist in districts eminently suitable for Potato growing, but are not being cropped. The holders of this land can assist in this national effort by making such land available for Potato production—already some graziers have responded to this appeal, and their action is appreciated. The position is that there are experienced growers in need of land, and it is hoped that their desire to assist will not be frustrated by the lack of land.

THE POTATO MOTH.

Hot, dry weather conditions increase the danger of attack by the grub of the Potato Moth. Losses from this cause can be considerable because tubers damaged by the grub may not be marketed. Growers therefore are urged to take adequate precautions to reduce damage to a minimum.

A measure of control of the moth may be gained by moulding late in the season. As some four inches of soil are necessary to secure protection from the grub, the mould or hill should be broad, with the soil thrown well around the bases of the plants, so that all cracks are filled in.

At harvest time the tubers should be bagged immediately after digging. To leave them lying exposed, even for one hour, may result in serious infestation developing at a later stage. It is strongly recommended that bags be sown and removed from the paddock as soon as possible. If this is not convenient, bags of Potatoes should be covered with spare sacks until cartage can be arranged.

The practice of placing Potato tops on the bags to protect the contents from the sun cannot be too strongly condemned, as grubs which are present in the tops are placed in contact with the tubers and will cause further damage.

TOMATO SEEDLINGS TRANSPLANTED IN RECORD TIME.

Working with a double row transplanter, four men on Messrs. Edgell's property at Cowra, N.S.W., transplanted 62,000 Tomato seedlings

in 3½ hours. An idea of the merit of the performance may be obtained from the fact that several hundred women would have taken several weeks to do the job by manual labour.

The machine used is simple in construction and operation, yet those working it claim it to be the most effective in use, a statement substantiated by the above record performance.

WEEDS IN CARROT CROPS.

Control by Spraying.

SUCCESSFUL METHODS for the control of weeds in Carrot crops were recently described by Messrs. C. E. Cole, A. C. Doery and D. M. McAlpin, all of the Victorian Dept. of Agric.

The following is a summary:—

1. Control weeds in Carrot crops by cultivating as much as possible. Destroy the remaining weeds by spraying with "Kerosene Weedicide," marketed by Pool Petroleum Pty. Ltd.

2. Use the weedicide neat—no preparation of the spray is necessary.

3. Spray when the Carrots are in the 1 to 4 "fern-leaf" stage. Avoid later spraying as older weeds are hard to kill.

4. Don't spray the same crop twice—a taint may persist in the crops to maturity.

5. Don't spray in very hot weather.

6. Use a fine, misty spray.

7. Be economical with the weedicide. For strip spraying of Carrots in 18 inch rows, 20 to 50 gallons per acre may be enough. When the whole area is sprayed up to 80 gallons per acre may be necessary.

VALUE OF BORAX.

Essential for Vegetable Culture.

Recent American research on the effect on plant growth of soils completely freed of borax has achieved astounding results.

In order to ensure complete control of the amount of borax present the experiments were performed in specially prepared pots, and to eliminate genetic differences between Potato seed pieces used, each seed tuber was cut through the stem end into equivalent sections. Half of each tuber went into the pot fertilized with borax and half to the pot without borax.

Potatoes with borax yielded 1,296 gms. of good tubers per pot. Those in the pots without borax yielded 52 gms. of small tubers which were absolutely worthless. This is a 25-fold increase in the tuber yield from the use of borax in this particular soil.

Potato plants starved for boron suffered a severe attack of early blight while right beside them those receiving borax escaped.

Turnip seedlings deprived of borax withered when two inches high, while in the same soil, with borax added, the turnips were normal.

String Beans grown without borax developed no blossoms, and Tomato seedlings transplanted into boron-free soil showed no further growth.

Cabbage, Lettuce and Beet also responded markedly to borax.

INSURANCE

THE F. & M.G. Society Ltd.

Recommend that Growers avail themselves of Insurance benefits with

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ASSETS EXCEED £22,000,000
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WAGES IN FRUIT INDUSTRY.

A.W.U. Agreement in Sth. Aust.

At a meeting of the Australian Workers' Union at Renmark, in January, the Secretary, Mr. C. R. Cameron, announced details relative to the new wages awards.

New classifications: Senior classer £7 a week; classer, £6/15/-; blender and/or typer, £6/3/-; assistant to puller-away, £5/13/-; box, case, sweat and crate repairer, £5/13/-; forewoman, £5.

Mr. Cameron stated that the wage increases were 4/- a week loading for all casual block hands, including pickers. Wage increases for packing

house employees were: Leading hands in charge of lumpers 3/- to 13/- a week; employees engaged on steaming down 3/- week and provision of overalls, pullers-away 5/- to 10/- week; nailing machine operators 1/-; box-makers 1/-.

The agreement deals with the wages and conditions for permanent block hands, pickers and packing-house employees.

Other conditions in addition to the foregoing included (for permanent block hands and packing-house employees):—Six days sick leave a year; one week's annual leave after first year's service, and thereafter two weeks a year; payment for all public holidays; double time for Sunday and holiday work; time and a half for first two hours overtime and

double time thereafter; "smoke-oh" for ten minutes in employers' time.—"Murray Pioneer."

SOUTH AUSTRALIAN GRAPES.

Owing to unseasonal conditions, wine Grapes suffered some damage, and it was recently estimated that a vintage of only 70 per cent. of normal could be expected. If drought conditions continue, the quantity will be further reduced.

For drying Grapes, the estimated Currant crop in non-irrigated areas is only 30 per cent. of normal. Frosts wrought havoc.

In the irrigated areas, states the Dept. of Agric., frost damage was

more erratic, but probably 10 per cent. of the promised crop of drying Grapes has been lost, and the total crop appears to be 80 per cent.—90 per cent. normal. Gordo crops are lightest, with only 70 per cent. to 75 per cent. of a normal crop.

For the State as a whole, dried vine fruits are likely to aggregate 10 per cent. below a normal crop, and considerably less than in 1943/44.

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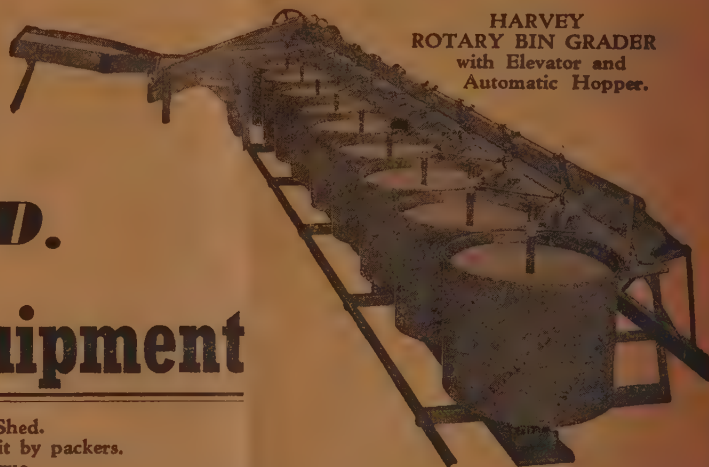
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Rotary Bin Grading Equipment

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Rotary Bins considerably increase the average daily output. No pawing of fruit by packers.
Stem punctures and bruises eliminated. Write for catalogue.



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ROTARY BIN GRADER
with Elevator and
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Citrus Graders, Citrus Polishing Machines & Packing House Equipment

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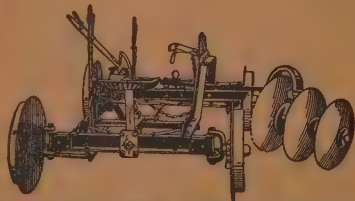
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HOT OR COLD WATER

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"HARVEY" built "PETTY" PLOW:
Plows out strips which have not been plowed for years. Cuts through couch grass with the greatest of ease. Also plows up to the trees and in the centre. **DISC CULTIVATING GANG** can be attached in place of Disc Plow Gang.



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POWER LIFT HBT MOULDBOARD
ORCHARD PLOW: A one-man job.
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THE "HARVEY" LANCIA
DISC PLOW is designed specially for the hardest kind of plowing. Low overhead clearance for low overhanging trees. Can be racked over for both plowing close up to and away from the trees. Equipped with the famous "HARVEY" Power Lift or Screw Lifts which are operated from the seat of the Tractor.

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"HARVEY" PATENT OFFSET TANDEM DISC CULTIVATOR: Cultivates right up to the butts of the trees or vines while the Tractor is driven right out in the middle of the row. Proved to be an excellent machine for deeply cultivating heavy irrigation land.



Cuts out all hard working under citrus trees, and keeps the ground level. Specially designed to work right under the limbs up to the trunks of the Orange and Lemon trees. Will lift limbs loaded with fruit off the ground, cultivating to any predetermined depth, and then gently putting back in position the fruit-bearing limbs without injuring the fruit or fibrous roots. Cuts out all weeds without clogging.

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S.A.—Silbert, Sharp & Bishop, Rundle St., East Adelaide.
W.A.—Paterson & Co. Ltd., St. Georges Terrace, Perth.
S.A.—Cole & Woodham, Box 12, Renmark.

Southern Tasmania—Wm. Crosby & Coy. Pty. Ltd., Collins St., Hobart.
Northern Tasmania—Max Geaves, 177 Brisbane St., Launceston.
Queensland—Buzacott (Queensland) Ltd., 443 Adelaide St., Brisbane.

Fruit Production in N.S.W.

Citrus, Apples, Prunes, Light;
Vine Crops Heavy.

CITRUS CROP PROSPECTS for 1945 are so far rather unfavourable: recent dry conditions have had their adverse effects and the new crop is shedding heavily, even in some irrigated areas, states the Division of Marketing, N.S.W. Dept. of Agric. A good many growers are still very short of labour, and because it has been impossible to give the trees proper attention, black spot has developed fairly extensively.

The 1944 crop is believed to be in the region of 2,000,000 bushels, as compared with 2,900,000 in 1943.

Apples: Due to the dry conditions inland, the Apple harvest this year will be light. Hail damage has been reported from the Batlow district, where up to 80 per cent. of the crop is said to have been affected; fairly extensive damage by hail has also been reported from Young. The orchards are at present being sprayed and the fruit thinned out. Most of the fruit is rather small, and good rains are needed before it can fill out.

The Prune crop will be well down from last year's production level of 2,250 tons. The Young district has experienced a very adverse season from drought and hail, and Prune production from that district is expected to be only about 100 tons as against 1,000 tons last year. A satisfactory crop is in prospect from the

Murrumbidgee Irrigation Area, but this will not offset the above loss.

Dried vine fruits are sizing well in the Murrumbidgee Irrigation Area, and though hail damage at Yenda reduced the potential crop somewhat, it is still expected to be larger than last year's.

N.S.W. APPLE AND PEAR GROWERS' ASSOCIATION.

At a recent meeting of the Executive of the N.S.W. Apple and Pear Growers' Association, the following matters were discussed:—

Compulsory Hail Damage Insurance: In view of the number of letters received opposing compulsory hail damage insurance, it was decided to let this matter lapse, as no further good could be done unless a united approach could be made to the Minister for Agriculture on this problem.

Ceiling Prices. The response by members to supply information concerning crop prospects was gratifying. Reports indicated that the drought conditions have affected the fruit crop in all districts, and it appears that the Apple crop will realise approximately 25 per cent. of normal, Pears slightly better.

In view of this situation, it was decided to ask the Prices Commissioner for an open market in respect to this season's crop. Failing this, to request that the present ceiling remain until the main crop had been marketed, with corresponding increases for the remaining months of the year.

Primary Producers' Union. An invitation was received from this organisation to affiliate in the interests of the fruit growers, but membership is qualified to the extent that those joining must be federated throughout Australia. The Executive is of the opinion that it would be an advantage to become affiliated with the P.P.U., but consider the time inopportune to attempt to organise a Commonwealth Association.

Claims for Compensation. Although the case before the High Court has not been finalised, the Executive is of the opinion that this case will not affect the claims of growers in N.S.W., because of the ample evidence available to substantiate the claims made. Consequently, the Minister for Commerce and Agriculture is being urged to finalise the claims of N.S.W. growers at an early date.

Docket Systems. Despite repeated applications to the State Department of Agriculture for the installation of the docket system no satisfaction has been received, and the question is being reopened with the Minister. Growers are convinced that the introduction of a duplicate docket system at the City Markets is the only means of affording growers some protection.

PATENTS

George A. U'Ren
Patent Attorney

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CANADIAN APPLE CROP.

The 1944 Canadian Apple crop is now estimated by the Canadian Dept. of Agric. to be in the region of 16,487,000 bushels: this is substantially heavier than earlier estimates. The 1943 crop was 12,892,200 bushels.

NEW DEFINITIONS.

Some interesting definitions are noted in Elbert Hubbard's "Roycraft Dictionary." These may not conform to Webster's or the Oxford Dictionary, but here they are:

Charity: A thing that begins at home, and usually stays there.

College: A place where you have to go in order to find out there is nothing in it.

Compliment: A sarcastic remark with a flavour of truth, or not, as the case may be.

Co-operation: Doing what I tell you to do, and doing it quick.

Epitaph: Postponed compliments.

Ignoramus: Any man who flatters himself that he is educated.

Optimist: A man who does not care what happens so long as it doesn't happen to himself.

Righteous Indignation: Your own wrath as opposed to the shocking bad temper of others.

Wit: The thing that fractures many a friendship.

Work: A plan of God to circumvent the devil.

Public Opinion: The judgments of the incapable many opposed to that of the discerning few.



Prevent pre-harvest drop!

Spraying with "Phyomone" about a fortnight before picking prevents the weakening of the stalk and consequent pre-harvest drop.

Dropped fruit is virtually useless, but picked fruit retains full flavour, colour and value.

Trials were conducted in 1941 by Government Agricultural Departments on different types of

fruit in Victoria and South Australia, with spectacular results. One Government test recorded a loss of only 9% from sprayed trees compared with 41% from unsprayed trees.

Application is simple . . . merely spray it on the trees so that fruit stems are wetted. Time: 10 to 14 days before maturity.

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Six Bin Capacity.
 Excellent Condition. Roller Elevator.
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Science in Horticulture

Many interesting items are included in the Quarterly Abstracts from the Imperial Bureau of Horticulture, E. Malling, Eng. Here are some of them:—

Michurin Institute's Fruit Experiments.

The selection section of the Michurin Institute is continuing its work on fruit. Some 30,000 hybrid varieties of Apples, Pears, Cherries, Plums, Apricots and Grapes are being raised. These plants which stood up to the exceptionally cold Winters of 1939 to 1942 will soon be bearing fruit. The Institute is proposing to distribute over 200,000 trees this year.—(Soviet Home Service (Wireless).)

A Pear Tree Bearing Two Crops Every Season.

V. Buchta describes a Pear tree in a private garden of the Waag Valley (Germany) which bears two crops regularly every season. This remarkable phenomenon is reported to have been first observed between 1905 and 1910. Flowering occurs at the normal time and then again, in June or the beginning of July, in clusters at the tips of the branches. The two crops ripen at the beginning of September and the end of October respectively, the fruits of the first crop being bigger, better in taste and with fully developed seeds, while the seeds of the second crop are very small and empty. Scions were repeatedly grafted on to other trees, and were found to retain their peculiarity. The origin of the tree is unknown.

New Peach Varieties for a Sub-Tropical Climate.

Improved types of Peaches which require only a short rest period and are therefore suitable for a sub-tropical climate such as California, where the ordinary Peaches fail to bear well, are being evolved and the following recently introduced varieties are recommended for trials. Robin Redbird (superior in size and quality to the well-known Babcock

Peach), and Weldon (large fruited, mild flavoured yellow freestone). These are earlies. The mid-season group includes Hermosa (a white fleshed freestone) and Sunglow (a yellow fleshed freestone). Fontana is a late-mid-season, non-melting, yellow fleshed cling suitable for canning.

Some Possibilities of Cutting Labour for Fruit Thinning with Bloom Sprays.

Tests with a number of different Apple varieties indicate that spraying with Elgetol, a proprietary product containing the sodium salt of dinitro-cresol, at a concentration of one pint per hundred gallons of water may result in very satisfactory thinning of vigorous varieties. The spraying should take place on the first day of full bloom and should be thorough enough to cover every flower. It should not be applied to very weak trees or those which have not received fertilizers in previous years. The result should be an adequate crop of good size and quality.

A Promising Attempt to Cure Chlorosis, due to Manganese Deficiency, in a commercial Cherry Orchard.

MANGANESE DEFICIENCY was diagnosed by spectrographic analysis and confirmed by the results of shoot injection and soil analysis as being the cause of ill-health of certain Cherry trees growing on a shallow, eroded, badly drained, sandy clay-loam in a Kent orchard. Slight but insufficient improvement was obtained by spraying the trees and by injecting branches and whole trees with solutions of manganese sulphate. Injection of large branches and trunks with solid manganese sulphate fully restored the green colour to the leaves and was followed by a marked increase in growth and cropping which, it is hoped, will last at least four years without further treatment.

The method of solid injection used, reduced after several seasons' experiment to the simplest form compatible with efficiency, was to insert tablets of dry manganese sulphate $\frac{1}{2}$ in. in diameter and $\frac{1}{2}$ in. long, weighing 1 g., into holes drilled with a $\frac{3}{8}$ -in. Irwin bit and spaced round the trunk at intervals at any convenient height. One hole was allowed for each inch of diameter of the trunk, the holes being closed with corks after insertion of the tablet.

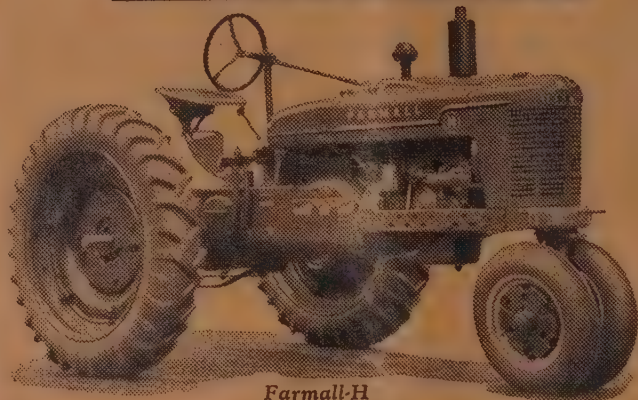
Unsatisfactory results were obtained when the prescribed dosage was reduced.—J. B. Duggan, "Journal of Pomology."

A New Apple Variety for Siberia.

SELECTIONS FOR WINTER hardiness and size of fruit were made among several thousand seedlings of the Apple variety, Arkad Dymcatyl. The best selection was propagated on a Malus Baccata stock, which caused it to produce larger and less acid fruits. The new variety, which has been named Poljarnoe (Polar), withstands temperatures of -59 deg. C., and is also extremely drought resistant.—Olonicenko, A. I. (Russian).

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Physical Characteristics of Bordeaux Mixture in Relation to its Qualities.

BORDEAUX PRECIPITATE made by mixing diluted compounds was settled more slowly and was more bulky than that made by mixing concentrated components (12 per cent.) and then diluting. The physical reasons for this are explained. In weathering tests during Winter, when rainfall totalled 3 to 4 ins., Bordeaux prepared with diluted components lost only 18 per cent., 34 per cent. and 38 per cent. of the copper, whereas prepared with concentrated components it lost 65 per cent., 70 per cent. and 58 per cent. The suspension quality of the concentrated type was improved by much agitation. That agitation also improved weathering quality was suggested but not proved statistically. In two of three tests the diluted constituent mixture deposited more copper, though that deposited by the concentrated constituent mixture was more visible on the twigs because coarser in texture. —E. E. Wilson, Phytopathology.

Phosphorus Deficiency in Pears.

PHOSPHORUS DEFICIENCY symptoms reported from a Pear orchard in Colorado, U.S.A., included severe burning of the margins and tip halves of leaf blades early in the season, a decrease in leaf size, failure of fruit to develop properly very short terminal growth, a scaly appearance of the bark and a dying back of the new growth. The trees recovered as the result of applying phosphate and improved on the addition of sulphur alone, probably as a result of the decreased alkalinity induced by its addition and the consequent increase

in available phosphorus in the soil.—L. R. Bryant, and R. Gardner, Amer. Soc. Hort. Sci.

The Role of *Pyrus salicifolia* Pall. in the Development of Fruit Growing in Arid Regions.

DETAILED ARE GIVEN regarding the habitat and biology of *Pyrus salicifolia*. It is highly drought resistant and tolerant of extreme temperature changes and of chalky or saline soils; it is also resistant to scab, woolly aphis and many other diseases and pests. Forms varying in time of ripening from August to October have been found. Variation has been observed in other features, too, and descriptions are given of some of the forms.

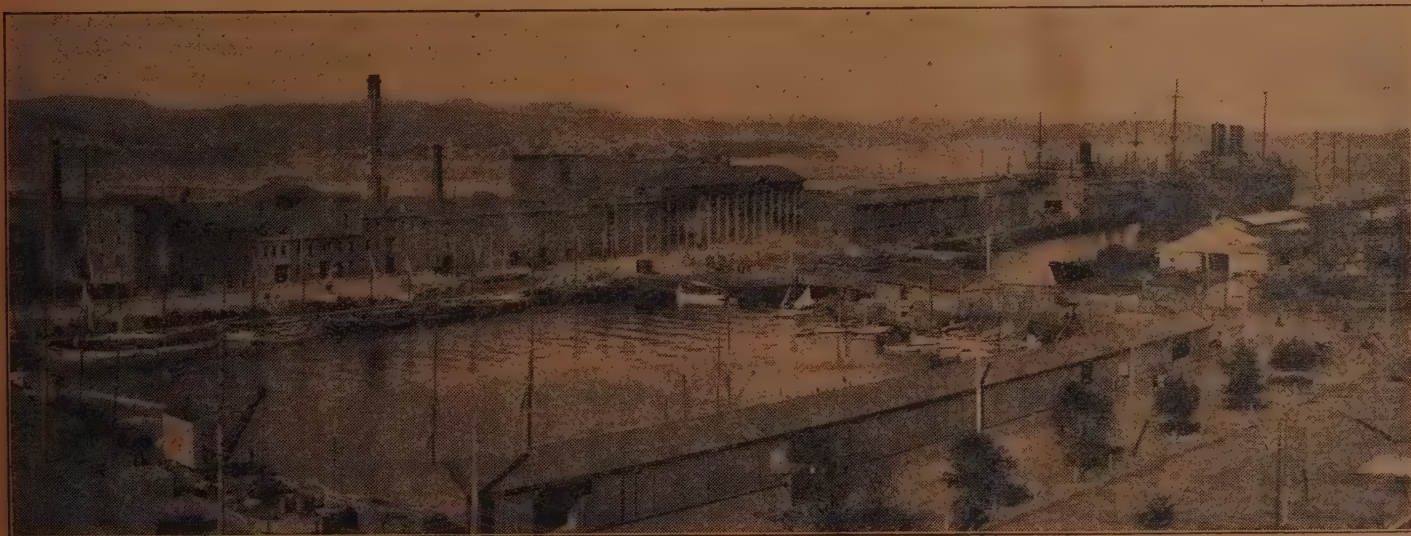
Pears grafted on to *P. Salicifolia* do better in arid soils than those on *P. Communis* rootstocks. Natural hybrids between *P. Salicifolia* and the common Pears have been found and a great number of others have been made artificially. The success of the crosses varies very much in different varietal combination. The hybrids are mostly intermediate between the two species, but many of them have leaves resembling those of *P. Heterophylla*. — P. V. Kuxnetzov (Russian).

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The Vegetable Grower

TOMATO GROWING.

Seasonal Hints for Growers.

GROWERS ARE ADVISED to carry out all routine work that may be neglected during the harvest period. The following is suggested:—

(1) **Cultivation:** Thorough cultivation as late as possible will help prevent competition in the late Summer months from weeds such as wild millet, fat hen, couch, etc., which are only too common in many district Tomato crops. Growers, who have adopted the suggestion of spacing rows from 3 ft. 6 in. to 4 ft. apart, will find that this wider spacing will enable them to cultivate to a later date, and, that it will be easier to move through the crop without damage to the plants at picking time.

(2) **Irrigation:** It will be found, when cultivation is discontinued, that the water does not soak so readily into the soil, and that, during the particularly hot weather, the plants may need fairly frequent irrigation. However, applications of water can be made in the Summer without detriment to mature plants, and such

a course is usually more economical of water—better soakage is obtained and irrigations need not be quite so frequent.

(3) **Tomato Grub Control:** Success in controlling Tomato grub depends on applying arsenate of lead early—two or three applications, efficiently applied, should give a good commercial control. It has been noticed that many growers are using a mixture of arsenate of lead powder and pollard for dusting their Tomatoes. Such a mixture is good for cutworms and vegetable weevil, but is not recommended for Tomato Grub. Further, it is wasteful of pollard, a commodity of which at the present time, is in very short supply.

(4) **Disease Control:** Spotted wilt is apparent in many crops, and growers are advised, with this and other similar diseases, to pull up affected plants and either burn or bury them.

Research work on disease and pest control in Tomatoes, is being carried out in the district by officers of the Department of Agriculture, and growers are asked to assist in the collection of information by reporting any serious outbreak or any unusual disease to either Mr. W. H.

Harris, Tomato Supervisor, at the Public Offices, Shepparton, or Mr. R. S. Harper, Officer-in-Charge, Horticultural Research Station, Tatura.

TOMATO GRUB CONTROL.

Adequate Equipment and Efficient Methods Necessary.

The use of arsenate of lead—either as a 50 per cent. dust or as a spray, using 1 lb. of paste to 16 gallons of water—is recommended by the Tatura (Vic.) Horticultural Research Station for the control of Tomato grub.

More than lead arsenate, however, is necessary for commercial control of this pest. The Tomato grower must possess sufficient equipment to do the job; he must do it efficiently, and at the correct time. Lack of equipment can be overcome to some extent by the use of primitive methods, such as a bag on a stick, but it is suggested that every grower

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should possess one knapsack duster for each five acres of Tomatoes under his control.

Dusters and dusting are suggested in preference for spraying by hand, because:—

1. In general, a better control can be effected. It is possible to get a fine coat of spray all over the fruit, even those covered to some extent by the plant, whereas with the knapsack spray the tendency is to cover only the exposed side of the Tomatoes.

2. A greater area can be covered in a shorter time with a duster. Windy days are a handicap, but growers keen to do a job can find suitable times.

3. The supply position for knapsack dusting equipment is much better than for knapsack sprayers.

Depending upon the size of the plant and their spacing in the rows, it is possible, if weather conditions are favourable, to dust some 2-3 acres of Tomatoes per day with a knapsack duster. At this time of the year, when the plants are relatively small, 10-15 lbs. of dust per acre should be sufficient, but for later applications, 25-30 lbs. of dust may be required to provide a good protective cover. Three applications of lead arsenate, efficiently applied at the correct time, should provide a good commercial control of Tomato grub. What of the cost?

Assuming that 20 lbs. of dust per acre were used at each treatment, the cost of dust for three applications of 20 lbs. each would be about £2/10/- per acre, i.e., the value of approximately 17 cases of standard grade Tomatoes. The cost of knapsack dusters is in the region of £6.

As many growers lose up to 20 per cent. of their crop each year, even after buying equipment, and dust and paying to have the job done, they would still be in pocket, and add materially to the district production of Tomatoes, which are in ever increasing demand by food authorities.

SPOTTED WILT OF TOMATOES.

No Effective Method of Control Known.

In normal seasons Spotted Wilt diseases of Tomatoes is not as serious a problem in the Goulburn Valley as it is in the districts near Melbourne, where in some years up to 50 per cent. of the plants are lost. Growers, however, are advised to be in a position to recognise the disease in the field and know what steps to take to prevent its spread.

Spotted Wilt is a virus disease — which is capable of infecting a wide range of plants, vegetables, ornamental plants and weeds, but the Tomato is one of the most susceptible hosts. Ornamental plants, such as Black Nightshade, Plantain, etc., assist in carrying the disease over from season to season.

The earliest symptom of the disease on Tomatoes is the occurrence of irregular, bronze or chocolate-coloured markings on the young leaves, and frequently the topmost leaves curl down and appear wilted. The affected plant rapidly loses its vitality and growth ceases.

If infection occurs when the plant is approaching maturity, it may still produce a reduced quantity of marketable fruit. However, the mottled appearance of the fruit produced by

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is supplied in 4 ounce bottles—each bottle contains 5 grams Naphthalene Acetic Acid and will make 100 imperial gallons of spray—

Can be applied with effectiveness and safety with Arsenate of Lead, Lime Sulphur or Miscible Oil Sprays.

Full instructions on every bottle.

CLINGSPRAY is a synthetic vegetable hormone in liquid form, containing Naphthalene Acetic Acid, which gave excellent results when tested by officers of the New South Wales Department of Agriculture throughout the 1941-42, 1942-43 seasons. (See New South Wales "Agricultural Gazette," January, 1944).

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QUEENSLAND—

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WESTERN AUSTRALIA—

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the infected plants usually detracts from its market value. The mottling takes the form of yellow blotches or concentric rings on the skin of the fruit.

The virus is spread in the field from diseased to healthy plants, or, from other infected host plants, to Tomatoes by sucking insects, chiefly two species of thrips.

Many experiments have been conducted in Victoria by the Department of Agriculture to find a suitable spray control for this disease but without success.

Growers are therefore advised not to purchase spray materials which may be advertised as a cure or prevention for "Wilt" of Tomatoes, but instead, to practise clean cultivation, particularly along headlands and to destroy weeds such as Black Nightshade and Plantain when they are observed in the field.

Affected plants should be pulled out and replaced by clean healthy plants if the season is not too far advanced. The disease is not soil borne so growers need have no fear in replacing affected plants.

GREEN PEA TRIALS.

Focusing Special Attention on Yield and Maturity.

Mr. T. D. Raphael, horticulturist, has given a progress report on the Tasmanian Green Pea trials.

He said that, take the 1943-4 season as a whole, growing conditions were good. Exceptionally heavy rains occurred in November and January, and the latter rains caused a setback to crops and ripening pods were affected.

A few new varieties, including Alaska and Mammoth Blue, were on trial for the first time. Other new strains sown included two of Surprise, five of Cannons' Perfection and eighteen of Greenfeast.

Mammoth Blue proved both vigorous and productive—particularly in the second sowing. Comparative sowings with Meteor showed a difference of 20 days to the flowering stages, the crops exceeded the yield of Meteor by more than 50 per cent.

Alaska produced a very fair crop. Its season is short and closely approximates to that of Surprise. However, Peas of the latter variety are of a better quality.

Each season shows that, even with varieties known to be heavy croppers, small seasonal variations may have a marked influence on order of productivity.

On the whole, the heaviest croppers over the past three or four years were: Te Aroha, Southern Cross and King Edward. Early varieties such as Surprise, Massey and Laxall have generally occupied the lowest positions.

CARROTS AND PARSNIPS.

The seed of Carrots and Parsnips is sown always in drills in the plot 12 in. to 16 in. apart (Carrots 3 in. and Parsnips 3 in. in depth), and later thinned to 4 in. or 5 in. apart in the row. The first thinning takes place when the young plants are approximately 2 in. high, and in all probability half the seedlings will be removed. Many of the later thinnings will be large enough for table purposes. It is not advisable to leave

this last thinning too late, as it will influence the size of the main crop. Varieties of Carrot seed may be sown from August to March, and Parsnip from September to April. Carrots and Parsnips grow most satisfactorily in the lighter soil types. Avoid gravelly soils, as they tend to cause misshapen roots.

Root crops give the best results when they follow a leaf crop (Cabbages or Cauliflowers) that has been heavily manured, as with this rotation there should be nearly sufficient

residual fertilizer to mature the crop.

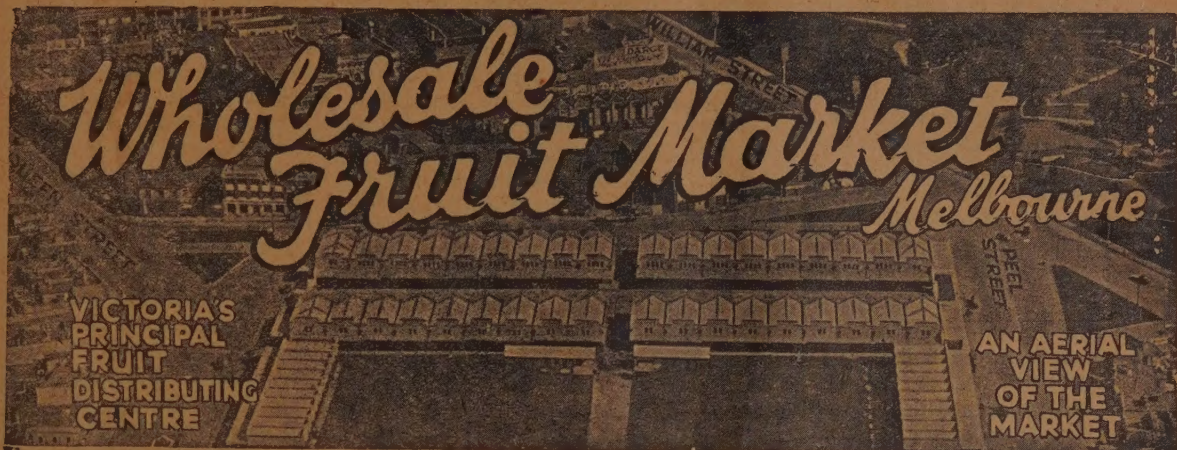
A 2 oz. dressing of blood manure to the square yard two months prior to harvesting may prove to be beneficial. When planting on new soils artificial fertilizers should be used and no stable manure. Fresh organic manures will cause the roots to become forked. A mixture of 2 oz. of sulphate of ammonia and 6 oz. of superphosphate should be broadcast just prior to sowing and worked into the soil with a fork-hoe. The crop may require stimulating with 2 oz.

of blood manure two months prior to maturity.

Carrots normally reach maturity in 3½ to 4½ months, according to the period of sowing, and Parsnips approximately a month longer. The best results are obtained from Parsnips in cool localities.

Variety.

Carrot (Short types): Red cored Chantenay (Mid-season), Early Scarlet Horn (Early); (Long types): Dangers (mid-season), Imperator (late). Parsnip: Hollow Crown, Guernsey.



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Market Notes and Prices

NEW SOUTH WALES.

Sydney (31/1/45).

The State Marketing Bureau reports as follows:

Large quantities of Williams Pears from Victoria, and small consignments of New South Wales fruit were available. Fruit that had reached a ripe condition had to be sold cheaply and rates for green packs were weak early, but showed a firmer trend prior to the close of the period.

Supplies of Apples were light and the market was firm. Small lots of McIntosh Red, Gravenstein and Granny Smith were forward from local sources and the maximum of 27/- per bushel was obtained for good quality fruit of reasonable trade size. Some South Australian Gravensteins were on offer at 27/- per case.

Current rates were: Apples, New South Wales, McIntosh Red, 20/- to 27/-; Granny Smith 24/- to 27/-; Gravenstein 27/- (very small sizes all varieties lower); Interstate, Gravenstein 27/-. Pears, New South Wales, Williams 6/- to 14/-; Victorian, Williams 6/- to 14/-. Oranges, Valencia, Coastal 10/- to 21/-; very small sizes from 5/-. Lemons, Coastal, Standard, Counts 72 to 150 12/- to 25/- per bushel case (plain grades lower). Peaches, 5/- to 18/-. Plums, 5/- to 14/-, specials higher. Nectarines, 10/- to 20/-, few specials higher. Grapes, Black Muscat 15/- to 20/-, extra choice to 25/-; Black (other than Muscat) 14/- to 18/-. Passionfruit, 5/- to 20/-, few higher, per half case. Bananas, 6d. to 7d. per

lb., inferior lower (weight 80 to 96 lb. per case): Papaws, 20/- to 40/-; Pineapples, 25/-. Rock Melons: Local 7/- to 12/-, few 14/- per tropical case. Water Melons, 11/8 per cwt. Cantaloupes, 8/- to 14/-, inferior lower, per crate.

Vegetables.

Peas, 5/- to 14/-, few 16/-; beans, 1/- to 5/-, extra choice 6/- per bushel; cabbages, 4/- to 14/-, selected large, 16/-; marrows, 2/- to 5/-, few 6/-; squash, 2/- to 6/- per dozen; lettuce, 4/- to 6/-, few higher, per case; carrots, 4/- to 8/- per dozen bunches, 25/- per cwt.; parsnips, 5/- to 8/- per dozen bunches, to 28/- (nominal) per cwt.; rhubarb, 3/- to 6/-; celery (local), 4/- to 9/-; eschallots, 12/-; mint, 3/-; parsley, 12/-; beetroot, 3/- to 6/- per dozen bunches; tomatoes (N.S.W.), 3/- to 10/-, choice 14/-, (Qld.) 6/- to 12/- per half-case; potatoes, N.S.W. and Tasmania, 1st grade, 7/10½; onions, brown and white, 23/6 (nominal); pumpkins, 14/- to 18/-; swedes, 12/- per cwt.; cucumbers, apple 2/6 to 4/-, green 2/- to 4/- per half-case.

VICTORIA.

Melbourne (3/2/45).

Vegetables: Beans, French, 8/- to 20/- 50 lb., few to 25/-; beetroot, 9d. to 1/- doz., max. 17/- cwt.; beet, silver, 3/- to 4/- doz. bunches; cabbages, 4/- to 10/- doz.; carrots, 3/- to 4/6 doz. bunches, max. 21/- cwt. without tops, 16/- cwt. with tops; celery, 6/- to 8/- doz.; cucumbers, 2/- to 3/- doz.; garlic, 1/6 to 1/9 lb.; horseradish, 1/- to 1/3 bundle; lettuce, 4/- to 8/- case; mint, 2/6 to 3/- doz.

bunches; melon, citron, 12/- to 18/- doz.; do., water, 12/- to 30/- doz.; onions, green, 2/- to 3/- doz. bunches; silver, 3/- to 3/6 doz. bunches; parsley, 2/6 to 3/- doz. bunches; parsnips, 3/- to 4/6 doz. bunches, max. 23/- cwt. without tops, 18/- cwt. with tops; peas, 5/- to 12/- 50 lb., few to 18/-; potatoes, 10/- to 10/6 bag; pumpkins, 10/- to 24/- doz., max. 25/6 cwt.; radish, 2/- to 3/- doz. bunches; rhubarb, 3/- to 4/- doz. bunches; spinach, 4/- to 6/- doz. bunches; tomatoes, 14/- to 20/- case (max.); turnips, 2/- to 3/- doz. bunches; do., Swede, 10/- to 14/- bag; do., 2/6 to 3/- doz. bunches; vegetable marrows, 2/- to 4/- doz.

Fruit (bushel case, unless stated): Apples, eating, 10/- to 20/-, few to 25/-; do., cooking, 8/- to 15/-, few to 18/-; Apricots, 15/- to 25/-, few to 30/-; Blackberries, 8/- to 9/- doz. punnets; Figs, 10/- to 14/- half case; Grapes, Currant, 12/- to 16/-; Sultanas, 12/- to 15/-; Rasin des Dames, 20/- to 26/-; Walthams and Muscates, 25/- to 36/-; Oranges, Valencias, 18/6 to 21/6 (max.); Lemons, 22/- to 25/- (max.); Raspberries, 1/- to 1/3 punnet; Strawberries, 1/6 to 3/- punnet; Nectarines, 10/- to 20/-, few to 22/-; Peaches, 5/- to 15/-, few to 18/-; Pears, dessert, W.B.C., 5/- to 10/-, few to 12/-; Papaws, 22/- to 30/- double case; Plums, 6/- to 15/-, few to 20/-; Bananas (green), 30/- to 52/- double case, few to 55/-; Pineapples, 22/- to 27/6 double case, max. 53d. per lb.; Passionfruit, 16/- to 25/- half case; Canteloupes, 10/- to 14/-.

BANANA RIPENING IN BRISBANE

The Banana Sectional Group Committee of the C.O.D., has recommended the building of three additional ripening rooms in Brisbane when conditions allow.

The present capacity of the Banana rooms is 2,600 cases weekly.

SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

The quarterly meeting of the executive of the S.Aust. Fruit Marketing Assn. was held in Adelaide on 26th January.

There were present—J. B. Randell (Chairman), R. G. Hannaford, M. G. Basey, R. O. Knappstein, R. H. A. Lewis, W. W. Miller, H. N. Wicks, L. J. Bishop and E. W. Ellis (Secretary).

Correspondence.—Hon. T. Playford, Premier, wrote accepting position as Patron.

The Export Development Group wrote setting out their aims and objects. Deferred till next meeting.

Cold Store Stocks.—It was decided to ask the Dept. of Agri. to supply monthly figures of stocks of Apples and Pears held in cold stores from August, 1943, to December, 1944, to enable the Association records to be brought up to date.

HARCOURT COOL STORE.

The annual meeting of the Harcourt Co-operative Cool Store Ltd. was held at Harcourt on January 31st.

In presenting the annual report the Chairman, Mr. J. H. Lang, stated that after providing £635 for depreciation and £236 for taxation, there was a profit of £51. An amount of £834 was received for precooling and storage, principally Potatoes for Adelaide.

The space rent, £10 per share, has been lowest since the inception of the company in 1918, as the rental of the shares was fixed at £20; this gives a return of 8 per cent. to those shareholders who leased their space.

During the year enquiries were made as to the desirability of extending the store. The response of the shareholders was good, but owing to war-time restrictions it was found not possible to carry this out in time for the coming season, but it is still under consideration. The fruit in store was kept well, with exception of some lines of Jonathans that developed Jonathan Spot, to which this variety is subject, and is not incidental to cool storage.

The prices obtained on local and inter-State markets were remunerative.

Owing to curtailment of water for irrigation the prospects of the coming season are not as good as might be desired, but there is every prospect of a good market for all fruits, and with the strong financial position of the company the expenses of storage can be reduced to a minimum.

The engineer, Mr. W. W. Brown, and staff rendered satisfactory service.

Messrs. J. H. Lang and J. H. Ely were re-elected directors. The Secretary is Mr. H. M. McLean.

HE'LL IMPROVE.

Father: "I don't like that soldier kissing you like that, Janet."

Janet: "Give him a chance, dad. He's just a beginner."

:: :: :: ::

He: "I'm a man of few words. Will you kiss me or won't you?"

She: "I wouldn't normally, but you've talked me into it."



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Poultry Notes

BROODINESS IN POULTRY.

Broody hens are sometimes used by small poultry-keepers and householders to hatch a few chickens, but to the commercial farmers who do all their hatching in the incubator, they are a nuisance.

Light breeds such as White Leghorns, Anconas, Minorcas, etc., seldom go broody, whereas in the heavy breeds such as Australorps, Rhode Island Reds, Light Sussex, etc., broodiness is usually fairly prevalent. This is probably why the White Leghorn is the most popular breed with the large commercial poultry farmers. If broody hens are allowed to remain in the nests for several days they are much harder to "break off the cluck," and also quickly lose condition, which means a longer period out of production. They also cause overcrowding in the nests and an increase in the number of cracked and broken eggs.

Poultry experts of the Victorian Department of Agriculture advise removal of the hen immediately she becomes broody to a broody coop or spare pen in which there are no nests and where she can be fed and watered. She should be back into production again in 10 days to a fortnight, but if allowed to remain on the nest many weeks of production will be lost.

Some hens go broody only once in the year, others many times. It is advisable to mark persistent broodies with a coloured leg band so that they can be culled out early and not used for breeding purposes.

POULTRY WASTAGE

A poultry expert has pointed out that scores of thousands of male chicks that could be reared into excellent table birds are destroyed by Australian poultry-farmers every year.

If caponized before they reach the crowing stage—eight weeks for the light breeds, sixteen weeks for the heavy—they can be fattened with no great effort.

Hatchery men in their own interests might turn out a better class of chicken so that rearers could buy unwanted cockerels when it would pay to rear them, the expert suggests. The prices of good table poultry are remunerative to those who understand the business, but good quality stock is a first essential.

FEEDING CHICKENS.

A poultry expert points out that careful planning will be needed to cope with a largely increased hatching of chickens with a prospective shortage of pollard and bran. The one material that could relieve the situation, not only now, but at all times and for fowls of all ages, is wheatmeal.

Results of four years' experiments have shown that there is no diminution in egg tallies following the feeding to laying stock of up to 50 per cent. of wheatmeal in their mash. It costs a little more than bran or pollard. Where wet mash is concerned, it must be really wheatmeal, not ground wheat. The latter is too coarse to make a good mixture. If poultry farmers' organisations took up the matter and each farmer gave a pledge to use wheatmeal as a third of mashes, much good work could be done.

Home Notes

IN THE KITCHEN.

With food rationing it has become more difficult to make tasty and original dishes.

Often it is only necessary to add some unusual ingredient to a dish to make it a highlight on the menu. Chutney is the usual garnish with curries, but Pineapple makes a pleasant variant. Try curried rabbit with Pineapple.

Soak the rabbit in cold salted water for half an hour. Joint it neatly. Melt a tablespoon of fat in a saucepan, and add a peeled and sliced Onion and Apple. Fry for a few minutes, then add the rabbit joints and brown. Remove from the fire. Stir in one tablespoon each of Tomato sauce, jam and curry powder, season with salt and pepper, then add enough boiling water to cover the rabbit. Bring quickly to the boil and simmer gently for one hour. Thicken with a little flour and cornflour and simmer again for half an hour. Just before serving stir in a squeeze of Lemon juice.

Serve with a border of mashed Potatoes, and with quarter slices of Pineapple which have been fried in a little butter.

COUPON-FREE MATERIAL.

Save this season's calmeal bags, they being better quality than the old "wonder material" (the sugar bag), and make up into good cushion covers, aprons, curtains, etc. They are a good colour, but may be dyed or stencilled on, the bags being excellent material for this. Even table cloths edged with gay material are attractive made from these bags.

LINENS AND CARPETS.

Bedroom furnishings—bedcovers, curtains, carpets and linen—seem to suffer the hardest wear and tear in the house, and they are expensive to replace, both in money and coupons.

Carpets and rugs can be brightened by brushing over with warm water containing vinegar or household ammonia, after they have been thoroughly vacuum-cleaned or beaten.

Similar cleaning will revive heavy curtains or upholstery. Velvet curtains or velours should be steamed

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over a pan of boiling water and hung outdoors. If lighter curtains shrink in the wash, there are a few ways of lengthening them. Net or marquise can be given new hems or an inset of lace. With heavier materials, a border of fringe may bring them back to original length, or another colour inserted.

Curtain pelmets can be reshaped and given a new border of gimp or fringe.

Worn piping on down quilts can be replaced with braid, ribbon, or bias binding, and the corners patched in quilting designs.

USING UP LEFT-OVERS.

Porridge: Use for the thickening of soups and stews. Thin it down with milk and strain for invalid gruel.

Cooked Eggs: Use in pies and sandwiches.

Meats: Rissoles, shepherd's pies, curries, stews; but remember: Do not cook, simply reheat.

Vegetables: Vegetable pies or rissoles; add to scones; soups made from vegetable purees; cover with thick sauce and cheese and cook.

Cake and Breadcrumbs: Trifles, puddings, custards.

Bread and Breadcrumbs: Make breadcrumbs; cut into croutons and bake in oven, then store till required; stuffings; puddings.

Vegetable Water: Stocks, soups and stews.

Bones and Fresh Meat Scraps: Stock.

Fish: Savoury fish dumplings cooked in fish stock; pies and patties. Reheat in cheese sauce.

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About the simplest method of removing old wallpaper is to soak it with hot water and then scrape. Use a brush to wet the paper and repeat until the paper and paste are soaked through. When all the paper has been removed, wash the wall with clean water.

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If your curtains are getting rather frail, put them in a cheese cloth bag while washing them. Swish them through the suds. Don't let them get too dirty before washing, and they will last longer.

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Horticultural Research in New Zealand

APPLE DEHYDRATION PLANT ESTABLISHED — APPLE JUICE CONCENTRATES — MAGNESIUM DEFICIENCY — MANURIAL EXPERIMENTS — ROOTSTOCKS — CODLING MOTH PARASITE.

Valued Activities of Fruitgrowers' Federation and Dept. of Scientific and Industrial Research.

RESULTS OF FRUIT RESEARCH carried on under the direction of the Department of Scientific and Industrial Research are outlined in the annual report of the Department, recently presented to Parliament. This summary, which is a continuation of the article in the September "N.Z. Orchardist" deals with the nursery at Levin and the Cawthron Institute at Nelson.

Early in the year a nursery was established at Levin by the N.Z. Fruitgrowers' Federation for the purpose of raising true-to-name trees from selected budwood and on selected stocks. In addition to supplying a nucleus of Apple stocks, the Plant Diseases Division has advised the

Federation in the lay-out and development of the nursery, and has given practical instruction to the nursery staff in approved methods of propagation.

On the recommendation of the Division, bud-selection committees have been formed in the chief fruit-growing areas, the function of these being to select the best available trees of stone and pip fruits, from which budwood is being secured by the Federation nursery, after fruit samples have been approved as true to type by officers of the Division.

As a result of collaboration among the Fruit Research, Dominion Laboratory, and Plant Chemistry Laboratory sections of the Department, a modern

Apple dehydration plant is now in commercial operation in the Dominion. The Department was responsible for the design of the plant, and continues to function in a technical advisory capacity to the Internal Marketing Division of the Marketing Department, on whose behalf the factory is being operated.

Cawthron Institute.

Magnesium Deficiency of Apples.

At Braeburn, two applications of 6 lb. ground dolomite or of 2 lb. magnesium carbonate per tree, applied in the 1939-40 and 1940-41 seasons, have now almost completely controlled magnesium deficiency in the Sturmer. Magnesium sulphate, even with two applications of 7 lb. per tree, has not proved so satisfactory, probably on account of more rapid leaching. At Tasman, on an orchard formerly receiving liberal potassic manuring, the recovery has been rather slower.

Chemical analyses show that treatments have increased the magnesia content of the leaves, and the data

correlate well with the appearance of the trees.

Apple Juice Concentrates.

Vacuum-concentrates have been prepared from the juices of a number of Apple varieties, and varietal differences are reflected in the products. Those from Sturmer and Lord Wolseley have a sharp acid character and make very pleasant drinks on dilution. It was thought that the products might be valuable for the Armed Forces, particularly in tropical or semi-tropical climates.

Apple-juice concentrate is now being used in U.S.A. for moistening and flavouring tobacco, and samples have been furnished to a local manufacturer for trial.

Long-term Manurial Experiment at Upper Moutere.

Maintenance of the area had to be discontinued during the past season, but notes have been made on the residual effect of the past 20 years' treatment. PNK trees are much the best. Ammonium sulphate, with phosphate and potash, is still giving better foliage and growth than dried blood. Market decline is noticeable in PN and NK trees, and the worst trees are those untreated or with nitrogen only.

Apple Rootstock Experiments at Annesbrook.

Twelve-year-old Statesman trees on Double Vigour (French Crab seedling) stock are now carrying half a bushel more fruit per tree than those on Northern Spy stock. This higher yielding capacity has been in evidence over the last three seasons.

Brown-rot and Black-spot.

The usual notification of the maturity date of ascospores of those fungi has been given for the benefit of Nelson orchardists.

Codling Moth Parasite.

The three parasites being studied are *Ephialtes caudatus*, *Aenoplex carpocapsae*, and *Cryptus sexannulatus*. The first was reared in considerable numbers and liberated in an abandoned orchard early in 1943. Beyond making further liberations in 1944, it was decided not to disturb the material but to study the extent of establishment next season. Comparatively small numbers of the other two parasites were available, so attention has been devoted to building up supplies before liberation. The rearing of these two has so far been less successful than of *E. caudatus*.

Red Mite and Mealy Bug.

Preliminary tests have been carried out with dichloroethyl ether on the Winter eggs of red mite, and some attention has been paid to the parasitic control of the mealy bug. This work will be extended next season.

OUR TAME PHILOSOPHER SAYS:

A really great man has always an idea of something greater than himself.—Hazlitt.

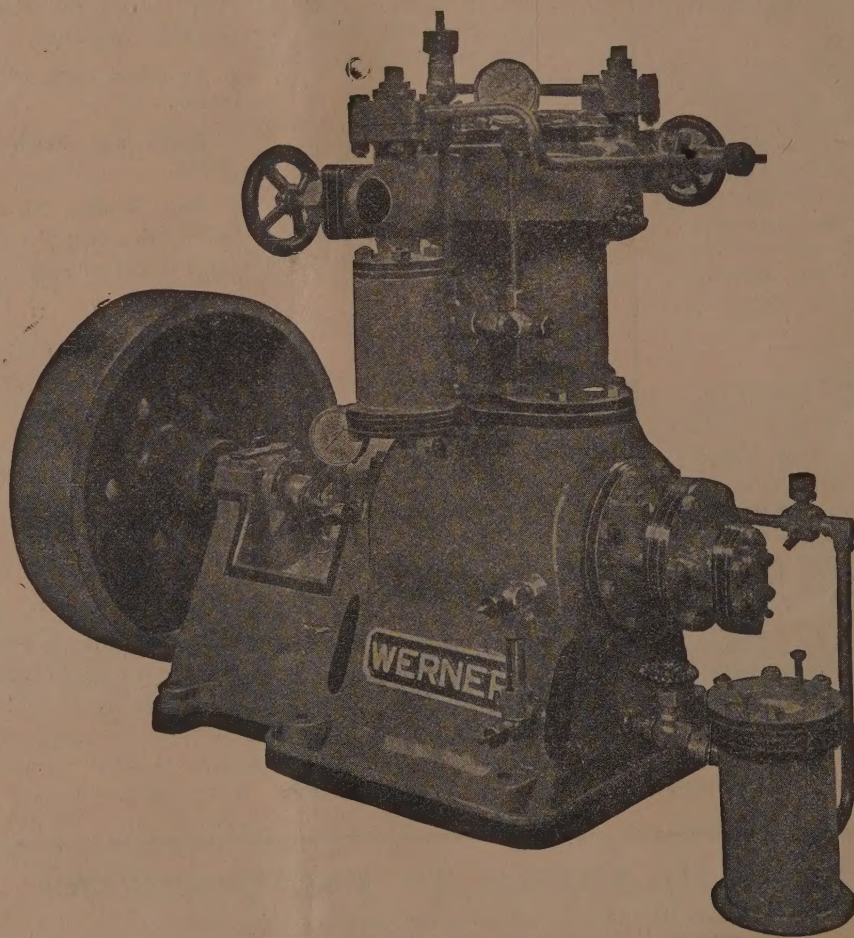
Happiness is everywhere, and its spring is in our own hearts.—Ruskin.

Keep your mind on the great and splendid thing you would like to do; and you will find yourself unconsciously seizing upon the opportunities that are required for the fulfilment of your desire.—Elbert Hubbard.

You must judge of a man by himself, not by the accidents of birth or cash.

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